THE IRON TRADE REVIEW

Vol. LXIV Cleveland, June 12, 1919 *No. 24*

Active Buying Keeps Up Steadily

Contracting Movement in Steel Products to Oct. 1 and Jan. 1 Well Sustained—Heavier Specifications Helping Mill Operations—Pig Iron Buying Reaches Large Proportions and Idle Furnaces Are Being Returned to Production

MOMENTUM gradually is being acquired by the iron and steel market as heavier buying in most products is being carried forward in a way clearly denoting a broadening of enterprise. Certain lines still are lagging but the general trend distinctly is toward a larger volume of business and more normal condtions. Buyers show no signs of being stampeded and are carefully weighing requirements before action but they are manifesting a stronger desire to discount future requirements. In this attitude prices seem to be playing a smaller part. Operations again are turning upward. Idle blast furnaces here and there are being put back in commission and mill output is increasing by stages.

Buyers not only are going ahead more confidently in contracting for their needs over the next three to six months, but they are specifying more liberally. Interest in deliveries is more marked. The briskest buying continues in bars, wire products and lapweld tubes. In the latter, oil field demands are such that producers are running at full capacity and some mills are not promising delivery before Oct. 1. The sheet market is opening up. Tin plate business is better. Plate conditions are spotty but the buying of the past week has been heavier particularly for tank requirements. Some encouragement is provided in plates by the fact that negotiations for contracts with foreign ship owners by American yards are approaching a definite stage. Bids have been asked on the steel for six 3000-ton tankships for an American oil company.

Building on Increase

Release of pent-up construction work is on the increase. Recent bookings by independent fabricators have exceeded the rated capacity of these shops. Not much of a backlog has been accumulated, however, because of the previous slack operations and competition for orders continues exceedingly sharp. As an example of the deferred construction needs of municipalities of recent rapid growth, Detroit has begun the purchase of cast iron pipe which is expected to reach 50,000 tons during the present year.

Iron Sales Heavy

Information is available that recent selling of pig iron has been much heavier than is generally believed. Some unusually large lots have been booked through negotiations quietly conducted with leading consumers in the foundry industry. Conservative estimates place the bookings of the past two weeks at well over 500,000 tons. Since this has been made up almost entirely of foundry and malleable grades, the wide distribution of the buying is emphasized. The past week has witnessed the most expansive market yet shown. Buffalo district furnaces which have been absorbing freights in various directions have gathered in orders this week which are put at 125,000 tons minimum. Alabama makers who now are naming $25 Birmingham for 2.25 to 2.75 silicon iron have taken on a large tonnage. The American Radiator Co. has been a considerable buyer and still is negotiating.

Urge Ore Buying

The lake ore market has expanded in keeping with the enlivened pig iron situation. Sales in the past week easily have reached 1,000,000 to 2,000,000 tons. Many furnaces, however, have yet to cover their needs which is bringing forth the warning from the operators that unless they act soon there is danger that sufficient ore may not be brought down to fill later requirements because of the expected heavy wheat movement.

While prices in several lines still are being shaded, current variations seem less extensive. Sheets appear steadier, after recent shading up to $3 to $4 per ton especially in the Chicago district. Semi-finished material is a source of some softness. The Cleveland district has brought forth cuts of $2 in slabs following a recent report of a similar concession in billets in that territory. Strip steel continues irregular.

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Foreign Ship Contracts Needed

EASTERN shipbuilders report that various negotiations for ship orders are under way with foreign interests, now that American yards have been freed of restrictions against accepting business abroad where it does not interfere with the government ship program. Discussions of prices in these negotiations are reaching a definite stage. A contract with Scandinavian interests is reported as hinging upon a price of $190 or $195 per ton. A leading British line, it is said, is disposed to offer $180 per ton on a large tonnage of new construction because of its inability to obtain assured delivery before an extended date from the well-filled home yards. These prices reasonably approximate the level at which American shipbuilders declare they can accept business and come out whole. The willingness of foreign ship operators to entertain new construction propositions around these figures, therefore, is encouraging. This is particularly true since representative American shipbuilders have declared that with a few years of active yard operations in which to effect a comparable seasoning of organizations and build up a skill of artisanship, the plants in this country will become the greatest and most efficient.

Mr. Hurley states that the two great objectives of any maritime policy for the United States are the establishment of both a great shipbuilding industry and the maintenance on the seas of an adequate fleet of carriers flying the American flag. It would seem, therefore, that cultivation of foreign ship contracts with American yards will tend to promote the attainment of one of these major ends. No obstacles should be placed in the path of this development so long as the American government's requirements are safeguarded. There is plenty of building capacity to take care of both classes of demand and it would seem from the present negotiations that foreign ship owners are reaching the stage where they will talk real business. This is a situation which if properly utilized can be made to possess great significance for the future merchant marine of this country.

An Interesting Situation in Tin

OF the stocks of pig tin allocated the United States by the interallied tin executive last year, only 1615 tons remained in the stores of the United States Steel Products Co. May 31. Thus the time is approaching when the government no longer will have any reason to control the importation or distribution of pig tin. The prospects are the war trade board will lift the restrictions on importations of Straits, Banca and Australian tin within the near future. Within 60 to 90 days after the bans are lifted, arrivals of tin may be expected, from Singapore, Batavia and Sydney.

However, a large amount of tin has been bought by consumers and speculators for shipment from countries at comparatively close points, such as England and Canada, for transhipment to this country after the restrictions are lifted. But it is not probable this tin will be allowed to enter the United States until such time at least as shipments from producing countries begin to arrive. Therefore, American consumers who need tin will have to figure on using such tin as is already in this country during the two or three months after import restrictions are lifted and pending arrivals.

Stocks of tin on May 1 were about 22,000 tons, including the interallied tin, tin in the hands of consumers, and the tin contents of concentrates owned by the domestic smelters. The average consumption this year has been 3713 tons monthly and June probably was up to this average, so stocks June 1 were about 18,250 tons. But these stocks were not evenly distributed. A comparatively few large consumers responded to the appeal of the tin administration early this year to accept an allocation of the interallied tin, while a number of smaller consumers did not. As these larger consumers already had supplies previously purchased through private importers or agencies, they consequently have had enough tin on hand to last them well into the last quarter of the year, while some

smaller consumers have been buying from hand to mouth. It looks now as though the large consumers and the domestic smelters would be the only sources of tin supply for two or three months after the interallied tin is used up. This would necessitate the restoration of an open tin market, with unrestrained selling to effect redistribution of supplies.

When the fresh tin does begin to arrive, it will be tin bought in the world market at prices around 50c a pound, whereas the interallied tin has been held at 72.50c a pound. Because of this situation, the course of the tin market from the time unrestrained trading is restored, until fresh tin begins to arrive and the American and the world markets will again more closely correspond, will be interesting. The inference to be drawn is that there will be enough tin to go around this summer, but that consumers will not soon be able to use tin at 50c.

Labor and the Manganese Industry

EVIDENTLY there is at least one department of the United States government that is not afraid to call a spade a spade when it comes to dealing with labor and wages. If an industry cannot exist without some concession from labor it is not afraid to say so without qualifying its assertions so as not to tread too hard on the toes of trades unionism. Admitted that no industry is worth while in this country that cannot insure a fair return to those who invest their money and those who labor, it sometimes may be possible for capital to make the best of a bad situation until conditions change, if labor also is willing to do its share. If labor insists on the highest wages while those who invest are losing heavily it follows that the industry cannot long survive.

In a report on the cost of producing manganese ore in the United States, the bureau of mines' experts declare that, notwithstanding the fact that producers have made a good start, the industry cannot live unless labor accepts a reduction in wages. That is putting the proposition with exceeding frankness, for a government department; but it is nothing more nor less than what is shown by the department's own figures.

"If it be assumed that wages will drop, to fall in line with the cost of living, and that the latter will not decrease, then the drop in wages will be equivalent to 25 per cent of the war wage," the report states.

In other words, the report finds the wage level today is 25 per cent higher than the cost-of-living level. Considering the possibility of a 25 per cent reduction in wages, greater efficiency of peacetime labor and better practices at the mines, the conclusion is reached that the cost of producing manganese will be reduced one-fourth from war time cost. Under such conditions it is possible to continue the industry in the United States in competition with Cuban and Brazilian producers, but even under the most favorable conditions, it is said, American manganese producers are to have "rough sledding."

Foreign Selling, a Specialty

EXPERIENCE of the past seven months has gone far toward convincing American industries that the functions of the export agent are important and effective. Anyone who has watched closely the efforts of these agents to hold on to such small foreign business that remained to the iron and steel industry after the war and to build up more business in the face of the many obstacles presented since the signing of the armistice, will realize at once that the problems of selling abroad are entirely different from the problems of home selling.

If a domestic purchaser requests a quotation on any product from a steel house he is compelled to submit certain specifications before a price is mentioned. This is not true with the foreign inquiry. Requests for quotations from abroad are not infrequently couched in the broadest of terms. The export salesman cannot afford to be so blunt as he would had the inquiry come from a domestic source. He carefully makes out a list of base prices, mentions some likely date of delivery, throws in the freight rates, figures cost of financing, and sends the foreigner a polite reply.

Often it develops that the inquirer is looking for an agency. It is not unreasonable to believe that some are commercial spies. At any rate it is considered wisest to follow up every little inquiry for it may develop into future business and just now the industry is seeking all possible friends abroad.

New Enterprise is Awake

FORMATION of new enterprises and their incorporation never has been so active as during the past month or two. Returns compiled by a statistical journal indicate that charters were issued in May for 900 individual corporations capitalized at $100,000 or more, the total being $748,683,500.

This is the greatest showing ever made except in February, 1901, when the formation of the United States Steel Corp. with a capital of $950,000,000 set a record. The nearest previous approach to the May total was in February of this year when the capitalization of new corporations was $515,665,360. The next ranking month was July, 1917, when new incorporations carried a total of $492,965,800. That large figure was reached largely as the result of the many enterprises started to handle government contracts.

From the first of the present year incorporations have been chartered with a total capital of $2,450,934,200, compared with $1,231,918,500 for the same period a year ago, an increase of almost 100 per cent.

Iron and Steel Prices

Corrected to Wednesday Noon

SCRAP, WAREHOUSE, ORE AND OTHER PRICES ON PAGES 1588 AND 1590

Pig Iron

Bessemer, valley	$27.95
Bessemer, Pittsburgh	29.35
Basic, Pittsburgh	27.15
Basic, valley	25.75
Basic, delivered, eastern Pa.	25.50
Basic, Buffalo, furnace	25.75
Malleable, Pittsburgh	28.65
Malleable, Chicago, furnace	27.25
Malleable, Buffalo, furnace	27.25
Malleable, delivered eastern Pa.	31.15

FOUNDRY IRON SILICONS

No. 2 Northern	1.75 to 2.25
No. 2 Southern	2.25 to 2.75
No. 2X Eastern and Virginia	2.25 to 2.75
No. 1X eastern	2.75 and up
No. 1, Chicago	2.25 to 2.75
No. 2 foundry eastern	1.75 to 2.25
No. 1X, eastern delivered Phila.	$30.50 to 30.75
No. 2, foundry valley, Pittsburgh	28.15
No. 2 foundry, Cleveland furnace	26.75
No. 2 foundry, Ironton furnace	26.75
No. 1 foundry, Chicago furnace	28.00
No. 2 foundry, Chicago furnace	26.75
No. 2X, eastern del., Phila.	29.50 to 30.00
No. 2X, eastern, N. J. tidewater	29.00 to 30.00
No. 2X eastern, Boston	29.90 to 30.90
No. 2X foundry, Buffalo furnace	28.00
No. 2 foundry, del. Philadelphia	28.50 to 29.00
No. 2 foundry, N. J. tidewater	28.50 to 29.00
No. 2 southern, Birmingham	25.00
No. 2 southern, Cincinnati	28.60 to 28.85
No. 2 southern, Chicago	30.00
No. 2 southern, Phila.	31.50
No. 2 southern, Cleveland	30.00
No. 2 southern, Boston	33.50 to 34.00
No. 2 southern, St. Louis	30.00
Virginia, No. 2X, furnace	26.50
Virginia, No. 2X, Philadelphia	30.60
Virginia, No. 2X, Jersey City	31.90
Virginia, No. 2X, Boston	31.20 to 32.20
Gray forge, valley, Pittsburgh	27.15
Gray forge, eastern Pa.	28.00 to 28.50
Silveries, 8%, furnace	40.25
Ohio Silveries, 8%, Chicago	44.05
Tennessee Silveries, 8%, Chicago	44.05
Low phos. standard, Phila.	43.00 to 44.00
Low phos. Lebanon, furnace	35.00
Low phos. standard, Pittsburgh	44.00 to 45.00
Charcoal, Superior, Chgo., last half	31.45

Coke

(At the ovens)

Connellsville furnace	$3.90 to 4.10
Connellsville foundry	4.75 to 5.25
Pocahontas furnace, nominal	5.00 to 5.50
Pocahontas foundry, nominal	6.00 to 6.50
New River foundry, nominal	7.50 to 8.00
New River furnace, nominal	7.50
Wise county furnace, nominal	5.00 to 5.50
Wise county foundry, nominal	6.00 to 6.50

Ferroalloys

Ferromanganese, 80 per cent, delivered, resale	$105.00 to 115.00
Ferromanganese, 80 per cent, delivered producers' price	$125.00
Ferromanganese, 80 per cent, English, c.i.f. Atlantic ports	121.00
Spiegel, 16 per cent furnace, spot	25.00 to 27.50
Ferrosilicon, 50 per cent, spot and contract, delivered	80.00 to 90.00
Ferro carbon-titanium, carloads, producers plant, per net ton	200.00
Bessemer, ferrosilicon, 10 per cent	45.00 to 48.75
Bessemer, ferrosilicon, 11 per cent	48.00 to 53.05
Bessemer, ferrosilicon, 12 per cent	51.00 to 56.35

Ferrosilicon prices at Ashland, Ky., Jackson and New Straitsville, O.

Semifinished Material

BILLETS AND BLOOMS

(4 x 4 inch)

Open-hearth, Pittsburgh	$38.50
Open-hearth, Philadelphia	42.50
Open-hearth, Youngstown	38.50
Bessemer, Pittsburgh	38.50
Bessemer, Youngstown	38.50
Forging, Pittsburgh	51.00
Forging, Philadelphia	55.00

SHEET BARS

Open-hearth, Pittsburgh	$42.00
Open-hearth, Youngstown	42.00
Bessemer, Pittsburgh	42.00
Bessemer, Youngstown	42.00

SLABS

Pittsburgh and Youngstown	39.00 to 41.00

WIRE RODS AND SKELP

Wire rods, Pittsburgh	$52.00
Grooved skelp, Pittsburgh	2.45c
Sheared skelp, Pittsburgh	2.65c

Shapes, Plates and Bars

(In cents per pound)

Structural shapes, Pittsburgh	2.45c
Structural shapes, Philadelphia	2.695c
Structural shapes, New York	2.72c
Structural shapes, Chicago	2.72c
Tank plates, Pittsburgh	2.65c
Tank plates, Chicago	2.92c
Tank plates, Philadelphia	2.895c
Tank plates, New York	2.92c
Bars, soft steel, Pittsburgh	2.35c
Bars, soft steel, Chicago	2.62c
Bars, soft steel, New York	2.62c
Bars, soft steel, Philadelphia	2.595c
Bar iron, refined, Phila.	2.595c
Bar iron, common, Chicago	2.50c to 2.62c
Bar iron, common, Cleveland	2.52c
Bar iron, refined, New York	2.62c
Bar iron, extra refined, Pittsburgh	2.75c
Hard steel bars, Chicago	2.45c

Rails, Track Material

Standard bessemer rails, mill	$45.00
Standard open-hearth rails, mill	47.00
Relaying rails, light, St. Louis	35.00 to 38.00
Relaying rails, Pittsburgh	38.00 to 40.00
Angle bars, Pittsburgh base	2.75c
Angle bars, Chicago base	2.75c
Light rails, 25 to 45, mill	2.45c
Spikes, railroad, Pittsburgh	3.35c
Track bolts, Pittsburgh	4.35c
Track bolts, Chicago	4.62c
Track spikes, Chicago	3.62c
Tie plates, Chicago	2.75c

Wire Products

(Per 100 lbs. to jobbers, carloads; retailers 5c more)

Wire nails, Pittsburgh	3.25c
Plain wire, Pittsburgh	3.00c
Galvanized wire, Pittsburgh	3.70c
Barb wire, painted, Pitts.	3.40c
Barb wire, galvanized, Pitts.	4.10c
Cut nails, Pittsburgh	4.445c
Coated nails per count keg, Pitts.	$2.75 to 2.85
Polished staples, Pittsburgh	3.40c
Galvanized staples, Pittsburgh	4.10c

Chain, Piling, Strip Steel

(In cents per pound)

Chain, 1 in. proof coil, Pitts.	6.50c
Sheet piling, base, Pittsburgh	2.55c

Cold rolled strip steel, hard coils, 1½ inches and wider by 0.100 inch and heavier, base per 100 pounds, 5.65c.

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Sheets

(In cents per pound)

SHEET MILL BLACK

No. 28, open-hearth, Pitts.	4.35c
No. 28, bessemer, Pitts.	4.35c
No. 28, open-hearth, Chi.	4.62c

TIN MILL BLACK

No. 28, open-hearth, Pitts.	4.35c
No. 28, bessemer, Pitts.	4.35c

GALVANIZED

No. 28, open-hearth, Pitts.	5.70c
No. 28, bessemer, Pitts.	5.70c
No. 28, open-hearth, Chi.	5.97c

BLUE ANNEALED

No. 10, open-hearth, Pitts.	3.55c
No. 10, bessemer, Pitts.	3.55c
No. 10, open-hearth, Chi.	3.82c
No. 10, open-hearth, Phila.	3.795c

Full sheet schedule page 1588.

Tin Plate

(Per 100 lb. box)

Tin plate, coke base, Pitts.	$7.00

Iron and Steel Pipe

Base Pittsburgh to Jobbers Carloads

Base, Pittsburgh	Black (Per cent off)	Galv. (Per cent off)
⅜ to 3 in., butt, steel	57½	44
⅜ to 3 in., butt, iron	39½	23½

Full pipe schedule page 1588.

Boiler Tubes

Steel, 3½ to 4½ inches, l. c. l.	40½
Iron, 3½ to 4½ inches, c. l.	16

Full tube schedule page 1588.

Cast Iron Water Pipe

Without War Freight Tax

(Class B Pipe)

Class A pipe is $1 higher than Class B.

Four-inch, Chicago	$54.80
Six-inch and over, Chicago	51.80
Four-inch, New York	55.70
Six-inch and over, N. Y.	52.70
Four-inch, Birmingham	51.00
Six-inch and over, Birmingham	48.00

Hoops, Bands, Shafting

Hoops, Pittsburgh	3.05c
Bands, Pittsburgh	3.05c
Hot rolled strip steel, Pitts. stamping quality	3.05c to 3.30c
Shafting, Pitts., carloads	28 off list

Rivets

Structural rivets, Pittsburgh	3.70c
Boiler rivets, Pittsburgh	3.80c
Rivets ⅞ in. and smaller Pitts.	65-10-5 off

Nuts and Bolts

(Prices f. o. b. Pittsburgh)

CARRIAGE BOLTS

(⅝ x 6 inches, smaller and shorter)

Rolled thread	60-5 off
Cut thread	50-10-5 off
Larger and longer	45-10 off

MACHINE BOLTS

(⅜ x 4 inches, hot pressed nuts)

Rolled thread	60-10-5 off
Cut thread	60-5 off
Larger and longer	50-10 off
Cold pressed semifinished hexagon nuts ⅝ in. and larger	70-10 off
Cold pressed semifinished hexagon nuts ⅞ in. and smaller	80 off
Gimlet and cone point lag screws	65-5 off

NUTS

Hot pressed, square blank	3.25c off
Hot pressed, square tapped	3.00c off
Hot pressed, hexagon blank	3.25c off
Hot pressed, hexagon tapped	3.00c off
Cold pressed, square tapped	3.00c off
Cold pressed, square blank	3.25c off
Cold pressed, hexagon blank	3.25c off
Cold pressed, hexagon tapped	3.00c off

Prices Present and Past

(Yesterday, a month ago, three months ago and a year ago)

Quotations on leading products June 11, average for May, 1919, average for March, 1919, and average for June, 1918. Prices are those ruling in the largest percentage of sales at the dates named.

	Prices June 11, 1919	Average prices May, 1919	March, 1919	June, 1918
Bessemer, valley, del., Pittsburgh	$29.35	$29.35	$32.55	$36.40
Basic, valley, delivered, Pittsburgh	27.15	27.15	32.35	33.15
*No. 2 Foundry, Pittsburgh	28.15	28.15	29.85	34.15
*No. 2 Foundry, Chicago, furnace	26.75	26.75	29.95	33.00
Lake Superior charcoal, Chicago	31.45	31.45	38.70	37.50
Malleable, valley	27.25	28.65	31.85	34.65
Malleable, Chicago	27.25	27.25	30.45	33.50
**Southern, No. 2, Birmingham	25.00	27.35	31.20	33.50
*Southern Ohio, No. 2, Ironton	26.75	26.75	29.95	33.00
Basic, eastern del., eastern Pa	24.50	28.80	32.85	32.00
**No. 2X Virginia, furnace	26.50	27.50	31.65	33.50
**No. 2X, eastern del., Philadelphia	29.75	30.10	35.10	34.25
Ferromanganese, 80 per cent, delivered	115.00	130.00	187.25	250.00†
Bessemer billets, Pittsburgh	38.50	38.50	42.25	47.50
Bessemer sheet bars, Pittsburgh	42.00	42.00	45.75	51.00
Open-hearth sheet bars, Pittsburgh	42.00	42.00	45.75	51.00
Open-hearth billets, Pittsburgh	38.50	38.50	42.25	47.50
Steel bars, Pittsburgh	2.35	2.35	2.61	2.90
Steel bars, Chicago	2.62	2.62	2.81	2.90
Iron bars, Philadelphia	2.595	25.95	3.005	3.685

*1.75 to 2.25 silicon. **2.25 to 2.75 silicon. †70 per cent.

	Prices June 11, 1919	Average prices May, 1919	March, 1919	June, 1918
Iron bars, Cleveland	$2.52	2.52	3.16	3.64
Iron bars, Chicago mill	2.55	2.50	2.86	3.50
Beams, Chicago	2.72	2.72	2.89	3.00
Beams, Pittsburgh	2.45	2.45	2.71	3.00
Beams, Philadelphia	2.695	2.695	2.958	3.185
Tank plates, Pittsburgh	2.65	2.65	2.91	3.25
Tank plates, Chicago	2.92	2.92	3.15	3.25
Tank plates, Philadelphia	2.895	2.895	3.155	3.435
Sheets, blk., No. 28, Pittsburgh	4.35	4.35	4.60	5.00
Sheets, blue anld., No. 10, Pittsburgh	3.55	3.55	3.80	4.25
Sheets, galv., No. 28, Pittsburgh	5.70	5.70	5.95	6.25
Wire nails, Pittsburgh	3.25	3.25	3.45	3.50
Connellsville furnace coke	4.00	3.72	4.00	6.00
Connellsville foundry coke	4.75	4.35	4.80	7.00
Heavy melting steel, Pittsburgh	16.50	15.55	14.65	29.00
Heavy melting steel, eastern Pa	16.00	15.30	14.25	28.50
Heavy emlting steel, Chicago	16.00	15.40	15.25	29.00
No. 1 wrought, eastern Pa	22.50	21.90	24.00	34.00
No. 1 wrought, Chicago	18.50	17.05	17.65	33.50
Rerolling rails, Chicago	18.25	17.45	16.30	34.00

(FOR ADDITIONAL PRICES SEE PAGES 1588 AND 1590)

Pig Iron Turnover is Tremendous

Week Adds Heavily to Bookings of Foundry and Malleable—Buffalo Sellers Active and Orders Taken Estimated at 125,000 Tons—Large Tonnages Quietly Closed—Some Steelmaking Demand Appears—Furnaces Are Resuming

Chicago, June 10.—Inquiry and buying of pig iron in the Chicago district has increased to the point where it is a real movement. It has broadened to take in a wide range of users and seems well established on a firm basis. A spirit of more or less conservatism is apparent but strong confidence in conditions and prices is manifested. One of the most encouraging signs is the fact that the use of coke by foundries is growing steadily, indicating an increased melt of iron. Larger consumers now are coming into the market and while most inquiries are for 500 to 1000 tons, with an occasional 2000 or 3000-ton inquiry, there also have been inquiries for 5000 to 10,000 tons. The largest sale was 12,000 tons of foundry. Malleable iron, which has been quiet for some time, is showing more activity and one melter whose ordinary requirements are about 10,000 tons a year has taken 7500 tons for last half. Another consumer who ordinarily melts about 7000 tons per year has bought 5000 tons for last half. Basic iron is slow. Local producers find present shipments are larger than their curtailed production and arrangements are being made for blowing in one Iroquois stack early in July, as soon as relining has been completed. An inquiry for 10,000 tons of foundry for last half by an automobile manufacturer in Wisconsin is now being figured. Several Michigan melters are out for malleable and foundry iron and 1000 tons of the former was recently closed for a Michigan foundry, with Chicago and Detroit furnaces. Agricultural implement manufacturers are inquiring. One in northern Illinois now is out for last half iron. A southern producer continues to book all grades for third quarter at points where only part of the freight need be absorbed and is taking only 2.75 to 3.25 silicon iron in the Chicago district proper, refusing to absorb the entire Chicago freight of $5 on the lower silicon grades. Sales of 1000 to 1500 tons have been made in Chicago by this interest. Silveries are stronger and with one exception Tennessee furnaces now are quoting on a Jackson county basis, taking advantage of the higher freight to Chicago. Full silicon differentials are being asked. For the time being the Birmingham base is being disregarded, except in the case of one Tennessee producer. Inquiry for the Superior charcoal is small.

Buying Movement Grows

New York, June 9.—The past week has been by far the most active one in the pig iron market since the signing of the armistice. Sales which actually have been consummated aggregate many thousands of tons, and in fact, the tonnage sold during the past week is in excess of the entire movement during May. The larger part of the business involved foundry iron for third quarter and last half delivery. Some malleable, charcoal and basic also figured. The largest single basic transaction involved 6000 tons sold by a Buffalo interest. The business in foundry, which may be conservatively estimated at more than 50,000 tons, comprised tonnages of all sizes. The largest single lot placed, as far as known, was 4000 tons for last half. In addition to the tonnage actually closed, a great deal of inquiry is out, and it is considered assured that the larger portion of this will be closed soon, since the effect of the business already placed has been to make producers somewhat more independent and to lead consumers still further to believe that higher prices are coming. The largest new inquiry out is 15,000 tons of second half basic for a St. Louis enameling interest. A large radiator manufacturer wants 6000 tons of foundry for last half. A Bridgeport valve maker wants 3000 tons of foundry and considerable malleable for third quarter. Several other large inquiries for foundry are before the trade, and many smaller tonnages are

in demand by a number of manufacturers.

While the market on foundry still may be quoted at $29 to $30, delivered at Newark and other northern New Jersey points, for No. 2X (2.25 to 2.75 silicon), there are signs of stiffening in several directions. One large Lehigh valley maker now has minimum prices of $28.50, furnace, for No. 2 (1.75 to 2.25 silicon); $29 furnace, for No. 2X (2.25 to 2.75 silicon), and $29.50 furnace, for No. 1 (2.75 to 3.25 silicon). Another Lehigh valley interest, however, continues to sell at $28.50 furnace, for No. 2X (2.25 to 2.75 silicon). A Buffalo maker has increased somewhat his silicon differentials from those recently quoted. Charcoal iron continues at $29.25, f.o.b. Michigan furnace. Buffalo malleable continues at $27.25, furnace, but very few sales are resulting at this figure since an eastern Pennsylvania maker apparently is taking most of the business around $28 furnace, or $29.40, delivered Newark.

Buying Still Strong at Buffalo

Buffalo, June 10.—Furnacemen say present activity in the pig iron market bears all the signs of an old-fashioned buying movement. Buyers are beginning to hurry to cover their needs for the balance of this year, and there has been inquiry in this market for foundry iron for 1920 delivery. Producers are not interested in this inquiry because they are uncertain as to their costs for such delivery. Sales in this district during the past week approximated 125,000 tons of foundry, malleable and basic iron, the greater portion, foundry and malleable. One interest sold 12,000 tons of basic and about 13,000 tons of foundry. The basic was at $25.75 and the foundry, averaging 1.75 to 2.50 silicon, was sold at the regular levels of $26.75 and $28 respectively. This interest reports an aggregate inquiry of 30,000 tons, of which 90 per cent is for foundry iron. This company will put its No. 1 furnace into blast in three weeks to take care of this business and its No. 2 in five weeks.

Foundry Iron in Demand

Pittsburgh, June 10.—While business in the steelmaking grades of pig iron is quiet, a considerable tonnage of foundry iron in lots running anywhere from a carload to 2000 tons has been moved. A radiator company which recently put out an inquiry for 3500 tons of foundry iron for last half shipment has covered 2000 tons of these requirements. It is claimed that the full market prices were obtained. Another radiator company seeking 1000 tons of No. 2 foundry (1.75 to 2.25 silicon) has closed for one-half that tonnage. The Standard Sanitary Mfg. Co. which recently covered its June and July requirements for its Louisville, Ky., plant amounting to 4000 tons, now seeks a similar tonnage equally divided between Pittsburgh and New Brighton, Pa. For New Brighton 2.25 to 2.75 silicon is wanted, 500 tons being for prompt shipment and the remainder for July delivery; for the local plant, 2000 tons of 1.75 to 2.25 silicon is wanted. One Pittsburgh house made sales of foundry aggregating 5000 tons in the week and except for equalizing freights here and there has not made any price concessions. Most of the sales of steelmaking grades have been in small lots but at least one good-sized inquiry is before makers. Follansbe Brqs. Co. is seeking 3500 tons of basic, 1000 tons for prompt and the remainder for July delivery. It is reported $24 furnace has been quoted on the business but whether this was resale metal is not clear. Resale tonnages of basic have shrunk to limited proportions and some of the steel companies which recently were inclined to accept business at less than $25.75 furnace have withdrawn. While a considerable spread still exists between basic pig iron and heavy melting steel scrap, the latter is so hard to obtain that more pig iron is going into the open hearth furnaces. It is suggested that this is the chief reason why the Carnegie Steel Co. lately has blown in several stacks. Sales of basic made by merchant producers lately have been at $25.75 valley and some bessemer iron in lots running from a carload to 100 tons also have been made at full prices.

New England Market Firmer

Boston, June 10.—Many furnaces have refused business rather than make a further cut in foundry iron and this has tended to stiffen the New England market. There still is considerable variation in the prices of reported sales. A Connecticut consumer paid $28.75 furnace for 150 tons of eastern Pennsylvania No. 2 X (silicon 2.25-2.75) and as high as $29 at Buffalo furnaces has been paid for New England delivery. Other sales reported from the same districts however show concessions of about $2 from these prices. More large tonnage orders were circulated last week than at any previous time this year. One firm reports a sale of 3000 tons of eastern Pennsylvania No. 1X (silicon 2.75-3.25) for last half delivery and it is understood the price was well in line with the prevailing market. The same firm reports a 600 ton sale and several smaller sales all consumated Friday and Saturday of last week. An inquiry for 2000 tons of malleable from a Rhode Island consumer has been partly closed and the balance will probably be placed this week.

Shading Still a Factor

Philadelphia, June 10.—While pig iron demand is lagging in this territory, as compared with other districts, the past week has brought forth improvement both in sales and inquiries. Some sellers state their bookings compare favorably with the total of any month this year. Business in basic, low phosphorus and bessemer is absent, and sales are restricted to foundry, malleable and charcoal, principally for prompt and third quarter and in part for second half. While some furnaces have stiffened somewhat in their quotations, the tendency to shade continues a market factor. A Buffalo maker offered two cars of No. 2X (2.25 to 2.75 silicon) at $28.90, delivered, equivalent to $25, furnace. Such concessions appear restricted to iron on hand. A Virginia maker with a freight rate of $4.10 to Philadelphia, who a week ago sold 13,000 tons for last half, has booked 8000 to 9000 tons additional at $25.50, furnace, for No. 2 plain (1.75 to 2.25 silicon), $26.50 for No. 2X (2.25 to 2.75 silicon), and $27.50 for No. 1X (2.75 to 3.25 silicon). This interest now will sell only for delivery in 60 days. The leading Virginia interest which recently decided to sell only for delivery in 30 days, now will make no sales for any delivery. It has two furnaces in blast and will pile iron in expectation of higher prices in the second half. Another Virginia maker says he will take no business under $31 for No. 2X (2.25 to 2.75 silicon). Several eastern Pennsylvania furnaces are well provided with orders as the result of recent selling and their prices are firmer alhtough No. 2X (2.25 to 2.75 silicon) still is obtainable at $28.50, furnace. Sales of the week include 500 tons of malleable at $25.75, Buffalo, to this district.

Sales at Heavy Total

Cleveland, June 10.—Heavy sales are reported in all directions by producers in this district, and the aggregate of these during the past week or 10 days has been not less than 100,000 tons. This has been distributed mainly in Cleveland, Detroit, Toledo, Indiana and intervening consuming territory. Some of the tonnage reported was placed at Buffalo. Some of the sellers announce that the tonnage booked has been as large as for any corresponding period in their history and they will be forced soon to blow in some additional capacity. Certain large producers state that with the first half tonnage which was carried past July, they are now virtually sold up to Jan. 1. The sales continue to be limited to foundry and malleable grades principally, and no steel-making iron has figured although there has been inquiry from outside points. Cleveland foundries have been buying quite liberally and in one or two cases 5000 tons of foundry iron have been taken by single consumers. No improvement is noticeable among the heavy casting plants, but business with makers of light castings and with the steel foundries is more lively. Generally iron shipments are better. New inquiry for foundry and malleable grades is heavy and runs into many thousand tons. In the going business prices have been well held on the basis of $26.75 furnace for 1.75 to 2.25 silicon although in cases absorbing of freights continues. Alabama iron is selling at $30 Cleveland for 2.25 to 2.75 silicon or $25 Birmingham. A sale of 1000 tons of 8 per cent silveries at $40.25 southern Ohio furnace was made. Small resale lots of this grade, however, have gone at $1 to $1.50 concession.

Demand Continues to Improve

St. Louis, July 7.—Pig iron men in this district report continued improvement in demand. The number of small transactions is growing rapidly, and some relatively large sales also are reported, the largest, 2100 tons of No. 2 southern, to a melter on the East Side. It appears that southern furnace interests have quoted a price at which customers are willing to buy, and this has proved an important step in releasing business. Several of the

larger makers who were holding off have now fallen in line. Production in the south has been reduced to an unusually low ebb, and numerous melting interests are making inquiries relative to supplies for the third and fourth quarter.

Prices Lower in South

Birmingham, Ala., June 10.—Southern pig iron continues in good demand. Absorption of freight rates into middle western centers by one or two companies has brought about a general reduction in the prices below the $26.75 base for 1.75 to 2.25 silicon iron approved by the industrial board. The schedule now is as follows: One and seventy-five hundredths to 2.25 per cent silicon, $24.50 to $24.75; 2.25 to 2.75 per cent silicon, $25 and 2.75 to 3.25 per cent silicon, $25.75.

Market Gaining Strength

Cincinnati, June 9.—The pig iron market is gaining strength and is helped considerably by large inquiries. Melters of foundry iron who are not fully supplied for the last half are now buying. Sales of northern iron seem to have exceeded those of southern iron last week, and quite a number were recorded for both third quarter and last half shipment. It is now understood that the Ironton furnaces are holding at $26.75 for No. 2 foundry (1.75 to 2.25 per cent silicon), for shipment to all points except where freight rates are against them.

Coke Inquiries Numerous

Producers and Consumers, However, Are Apart on Prices—Market is $4 on 48-Hour Fuel, But Not so Firm as Week Ago

Pittsburgh, June 10.—Inquiries for furnace coke for last half requirements are numerous and it is only because producers and consumers are somewhat apart on prices that business has not been done. Two inquiries for 10,000 tons each for the last half are reported and another for 20,000 tons. Several other inquiries involving important tonnages also have come before producers, but those making them seem to regard $4 as the best price they can afford to pay at least for the next few months, while the coke operators have set $4.50 as their minimum. A great number of inquiries received recently have come from the East and from Buffalo furnaces. Little doubt exists but that the sliding scale contract will be the popular form of business during the last six months of the year, but it has been difficult so far to arrive at a basis on such an agreement. Blast furnace interests are inclined to be cautious while coke operators, sensing a better market for pig iron by fall, and, fearing a labor shortage are inclined to exalted price notions. Spot Connellsville furnace coke is quotable from $3.90 to $4.10, with small lots of coke low in phosphorus and sulphur going as high as $4.25. Generally the market is $4 flat on standard 48-hour fuel but does not appear to be quite so firm as it was a week or 10 days ago. This change may be explained by the fact that the Pittsburgh steel company which has been a rather free buyer of coke because of labor troubles at its coal properties, no longer is in the market, while recovery in production in the past few weeks has brought up the supply to or somewhat in excess of current demands. It still is possible to buy small tonnages of furnace coke at $3.90. Adjustments of monthly contracts for June generally were at from $4 to $4.25, although it is understood that in a few cases less than $4 was accepted. Spot demands for standard foundry coke are fairly numerous, but individually small. Such business takes a range of from $4.75 to $5 in most cases. Some producers are quoting as high as $5.25. Several contracts for last half foundry coke are reported at $5.50, ovens. One prominent operator is quoting $5 flat against such business. Production in the Connellsville region for the week ending May 31, is estimated by the *Connellsville Courier* to have been 111,335 tons, against 108,073 tons the previous week.

New England Market Quiet

Boston, June 9.—Coke has been slower than pig iron to reflect the general business stimulation. The stiffening of prices in the Connellsville region is said to mean an increase here if the price there is to remain as the base for the local market.

Furnace Coke Advanced

Cincinnati, June 9.—One interest in the Wise county field has advanced foundry coke to $7.50, ovens, but this was to discourage orders from consumers, as it is understood that the company in question has all the business it can take care of for several months. Connellsville prices are growing stronger, and while there has been no definite change that would include the majority of producers in that district it is understood some brands of furnace coke heretofore offered freely at $4, ovens, have been advanced to $4.25.

Better Demand at St. Louis

St. Louis, June 7.—Dealers report a firmer feeling and better demand for all grades of coke. Some good inquiries from the west and northwest have materialized, and the volume of car-lot sales for immediate shipment was larger this week than during any seven-day period since the signing of the armistice. Several sizable contracts for delivery in the third quarter were placed during the past few days. An east side melter is in the market for 2000 tons of foundry coke, but plants on this side of the river apparently are well covered for the immediate future.

Ore Sales Are Moving up

Total for Week Exceeds 1,000,000 Tons, But Movement to Furnaces Without Ore Connections Still is Slow

Cleveland, June 10.—Lake ore sales during the past week went to a total far over the million-ton mark, of which about 500,000 tons were taken by independent furnace interests. The buying movement in pig iron was reflected clearly in the increased demand from those furnaces not having connections with ore companies. One such interest purchased 200,000 tons, another approximately 80,000, while the balance was made of smaller lots. Some of the largest furnace interests with ore connections arranged for heavy shipments. This is exclusive of the United States Steel Corp.'s operations. One such interest alone placed an order for approximately 500,000 tons. The market showed strength and activity far beyond any previous period thus far this year.

Despite the more cheerful tone of the market, ore sellers declared that the real buying movement on the part of the independent furnace interests has not begun, and they repeated their warning that unless the latter show more interest and take measures to cover their requirements there is real danger that they will be unable to secure the full amount of ore they need later in the season.

Reports from the Superior district are to the effect that operations at the mines have not been increased, except at those in which the Steel corporation is interested. One ore man who recently returned from making a survey of the situation reported that the independent mines were "next to shutting down."

"Of course, they will not be shut down," he said. "But the important feature of the situation is that demand has not come forth with sufficient strength to warrant them increasing their operations. A rush at the end of the season will find these mines incapable of coping with demand. If furnace interests realized the truth of the situation regarding mining operations and the possibility of a lack of cargo space they would not hesitate to buy now."

Shipments of ore from the Lake Superior district in May were 6,615,341 tons. Detailed figures follow:

Port	May, 1918	To June 1, 1918
Escanaba	583,463	654,880
Marquette	151,749	151,749
Ashland	669,647	817,005
Superior	1,250,536	1,352,267
Duluth	2,957,338	3,751,387
Two Harbors	1,002,608	1,300,292
Total	6,615,341	8,027,580
1919 decrease	2,176,890	1,000,521

The Lake Superior Iron Ore association recently decided to join the American Mining congress, the national organization seeking to promote the interests of all mining enterprises.

Scrap Market Expectant

Though Consumptive Buying is Backward, Dealers Holding More Strongly —Tonnages Not Easy to Obtain—Advances at St. Louis and in East

FOR COMPLETE SCRAP PRICES, SEE PAGE 1590

Chicago, June 10.—Iron and steel scrap in the Chicago district continues in the hands of dealers, who have every confidence in the future and are supporting the market strongly. Consumers, although they have not yet reached the point of covering their probable requirements, believe the present situation is strong and are buying for their current needs at prevailing prices. Quotations remain much the same as for last week, with a few slight advances, but the general opinion is that buying to any extent would immediately send prices to a much higher level. The spread between pig iron and scrap is unusually wide. The government is offering considerable tonnages of material left over when munition and other war manufacturing was suspended but the market is absorbing these without difficulty. Railroad lists are coming out regularly with a considerable aggregate, although those now under consideration are not large. The Chicago, Indianapolis & Louisville offers 1000 tons, the Chicago, Milwaukee & St. Paul 1200 tons, the Chicago, Burlington & Quincy 1700 tons, the Wabash 850 tons, and the Michigan Central is asking figures on an open list.

Trading is Deadlocked

Cleveland, June 10.—While on the whole the scrap iron and steel market here is showing considerable strength, buyers and sellers just now are deadlocked. Practically every melter is willing to buy—but at a figure below the market. Dealers, on the other hand, are not willing to accede to melters' figures, and in their efforts to buy, are finding producers of scrap have shoved up their prices. Yard interests, which seem to have close to a "corner" on scrap, are not at all anxious to sell, preferring to hold for a considerable increase. The result has been, naturally, to restrict trading. Odd lots, especially of melting steel, have changed hands in the past week, some special steel bringing as high as $17, it is reported. Little activity is noted in machine shop turnings. Borings, turnings and railroad malleable have been advanced in price.

Eastern Prices Are Higher

Philadelphia, June 10.—Advancing prices mark various scrap grades in eastern Pennsylvania district. Heavy melting steel now is quoted from $16.75 to $16.25 delivered. One large consumer is offering to buy at $16 delivered but is not getting much tonnage; another offering $15.50 delivered, is obtaining nothing. The purchase of machine shop turnings by the Phoenix Iron Co. has cut down the supply of cast iron turnings which in conjunction with the better buying of this class elsewhere has advanced prices to $10.75. Foundry scrap is in somewhat better demand but is not easy to get at ruling prices. Following the sale of considerable tonnage to a Chester buyer, low phosphorus is quiet.

Situation Dull But Firm

Pittsburgh, June 10.—Scrap iron and steel prices steadily are growing stronger in this district, not as a result of any particular activity on the part of consumers but rather because dealers sense an improved market at no distant date and are laying down in their yards such material as they are able to pick up. At that, steel manufacturers are making more inquiries for supplies. It has been denied by the Carnegie Steel Co. that this company is a buyer of heavy melting steel but the report persists that it is taking all the material of this grade it can secure at $16 delivered. It is doubtful if the company is getting much tonnage at that price as yard holdings are not available even at $1 above that level and with valley consumers paying as high as $17, not much opportunity exists for Pittsburgh district consumers to secure cheap supplies in outside markets. Much talk is heard of an $18 market for heavy melting steel at the first sign of real buying and even more than that has been quoted to dealers who have attempted to cover some sales. Compressed sheets are moving upward in keeping with the strength in heavy melting steel and while borings and turnings are not selling with any snap, holders are refusing to consider prices they would have been glad to accept a few weeks back. Revival of building operations and the consequent increase in the demand for rerolled reinforcing bars find reflection in a better and stronger market for rerolling rails. Low phosphorus is a shade easier due to the fact that the government is letting go of some of its shell forgings.

Prices at Buffalo Look Up

Buffalo, June 10.—Dealers are looking forward to $20 scrap before many days. Indications, they say, are that heavy melting steel will not remain long at $17. There is a strong inquiry from outside districts for this material, but dealers are not selling readily. It is impossible to buy a large tonnage of heavy melting steel in the local market at present prices. The market is stronger than last week. Cast iron borings are 50 cents higher. Great activity centers around lots of government scrap stored at plants in this district. Some weeks ago the Lackawanna Steel Co. bought 11,000 tons of ingots, forgings, rounds and billets stored at its plant. The price was $15 on the ground. The balance of the government material has been advertised twice and is under protest. A decision is being awaited from Washington as to whether the steel, amounting to 20,000 tons, will be readvertised or sold the next bidder. An Albany buyer took 2000 tons stored at a Buffalo plant.

Government Get Good Prices

New York, June 9.—Activity in the local iron and steel scrap market continues to be centered chiefly around heavy melting steel, borings and turnings, and with the exception of the buying by one large eastern Pennsylvania consumer, even this little of this material is moving. Prices at the present time are stationary, the tendency, if anything, being little downward. However, in contrast with this several lots of government scrap have been sold at figures higher than the generally accepted market. A number of government lots are being sold at this time on bids, one good-sized tonnage being closed at Boston today.

Prices Again Marked Up

St. Louis, June 7.—Revisions of scrap dealers' lists this week show advances throughout of from a half to a full point. Activities are confined almost entirely to dealers. The feeling is more bullish than at any time since the recent slump set in, and strong competition exists even for grades which were dull. The improvement in the pig iron market, and demand for mill products is the chief incentive in the scrap situation. Reserve stocks of many of the important users have been reduced and it is only a matter of time before they will be obliged to recoup. Yard men have been heavy buyers during the past two weeks, and thus far the price advances have not tempted them to let go of materials laid down last month at lower figures. Railroad offerings before the market during the week included 1300 tons by the St. Louis 1000 tons by the Missouri, Kansas & Texas; 1400 tons by the Wabash; 900 tons by the Union Pacific, and 26 cars by the Frisco. Bids were spirited, and the material brought top prices. There is a much better demand for light relaying rails. All varieties of steel are strong, and rolling mill grades are being well taken.

Foundries Buying More Freely

Cincinnati, June 10.—The scrap market continues to show signs of improvement, especially as far as prices are concerned, but transactions are becoming more limited in steel scrap. The foundries are buying a little more freely, as a number of them have not sufficient supplies to carry them through the year, and a few have not enough for third-quarter operations. The local molders' strike has been settled and this will mean the consumption of a larger tonnage of scrap. Steel interests in the Pittsburgh district are delaying buying, but it is expected that they will come into the market later. All prices are unchanged, but firm.

Stronger in the Valley

Youngstown, O., June 10.—A good demand has sprung up here for various grades of scrap and prices are higher. Two weeks ago crop ends could be had at $17.50 per ton but now $22.50 is being asked. Bailed sheet scrap two weeks ago brought

$10.50 and is now quoted at $14.50 by one dealer.

Dealers Still Buying

Birmingham, Ala., June 10.—Scrap dealers in the South are bidding sharply for iron and steel offered by railroads. Some scarcity is noted in cast and stove plate at the prices offered by consumers and activity in machine shop turnings and cast iron borings may cause an advance in prices.

Local Demand is Stronger

Boston, June 9.—Co-incident with the increased activity in foundry-iron local demand for scrap has been stimulated. Inquiries for No. 1 machinery scrap from textile machine manufacturers, at current and small orders from these consumers are reported. A Pittsfield manufacturer of paper mill machinery is in the market for last half delivery of No. 1 machine scrap and a tendency on the part of many consumers to protect themselves on the present low prices is noticeable. Southern concerns which straighten and splice old cotton ties for rebailing purposes have come into the market for this class of scrap. Ties previously selling for $9.25 for scrap purposes are now finding a ready rebailing market at $11. It is estimated that from 200 to 300 tons of cotton ties accumulate as waste from the cotton cloth mills in New England each week.

More Buying

Being Done in Semifinished—Alloy Steel in Demand—Slabs Shaded

Cleveland, June 10.—Both new buying and specification in semifinished material continue to increase. Some fair-sized tonnages now are pending in this territory, including one for 6000 tons of small and large billets for a local consumer for last half. An inquiry for 1000 tons of slabs for shipment to southern Ohio is being closed here. Price concessions on various forms of semifinished material are reported, the most definite of which are in slabs where $40.50 Cleveland or $2 under the regular price is understood to have been made. This is equivalent to $39 valley. Sheet bar sales are usually small and one of 500 to 1000 tons is noted. The McKinney Steel Co. has increased its operations and is operating 8 out of 14 open hearths. Automobile and accessory plants are actively inquiring for alloy steel in bar, billet and bloom form. One calls for 2500 tons, another for 500 to 1000 tons and one larger tonnage is active.

Wire Rods Are Sold

New York, June 9.—Business in semifinished material does not reflect the same improvement as some of the finished lines. A few lots of billets have been sold, but none of them have involved tonnages of importance. The best business in the semifinished market of late appears to have involved wire rods of which several thousand tons have been sold recently for delivery over the third quarter.

Good Sales in East

Philadelphia, June 10.—Large tonnages of slabs and rerolling billets for prompt and nearby delivery at full prices have featured the semifinished market. A better volume of small tonnage business also has been entered. Some of the latter has been at concessions, taking the form of waiving of certain extras. Fair sales forging billets and wire rods have been made at full prices.

Inquiry is Better

Pittsburgh, June 10.—While new business in semifinished steel is not particularly large, the steady expansion in the demand for finished steel is occasioning more inquiry on the part of the finishing mills and specifications against contracts are fairly heavy. One Pittsburgh producer recently was offered a contract for 3000 tons of billets and disposition among consumers generally is to line up third quarter requirements. Recent improvement in the orders and specifications for sheets finds reflection in the demand for sheet bars.

More Willingness to Contract

Youngstown, O., June 10.—A better demand exists in the valley for sheet bars, most buyers specifying the bessemer grade. While most of the business being transacted is for spot delivery, still the tendency to contract for next quarter is becoming stronger. A few good-sized tonnages have been closed recently on this basis.

Business Largely Orders

Pittsburgh, June 10.—Practically no contracting for cold rolled strip steel is reported by makers as the latter are in a position to make prompt shipments and buyers are inclined to take full advantage of this. Hot rolled strip steel although in better demand is not moving with the snap that makers could wish. Mill operations are at about 60 per cent. Prices show some irregularity on both grades. Mills ordinarily making hoops and bands are offering hot rolled strip at the hoop and band basis.

Better Market

Showing Up in Tin Plate—Cuts from Stock Continue

Pittsburgh, June 10.—While demands for tin plate upon makers in this district are considerably below normal, both specifications and orders are somewhat better than they were a short time ago. One manufacturer had an order recently for 10,000 base boxes from one consumer who has been out of the market for fully nine months. Quite a few orders are coming in for certain sizes to even up stocks and in the way of specifications one of the independent companies reports several covering consumers' requirements for the next three months. Although nobody looks for any larger than a 70 per cent pack of perishable foods this season, no doubt exists but that the crops are making good progress all over the country and container manufacturers have been called on to supply a good many wants in the past few weeks. As the can manufacturers produce their stocks of cans, they are taking more interest in tin plate.

Big Pipe

Fills up Mills and Deliveries Extended—Detroit Buying Tonnage

Pittsburgh, June 10.—Huge demands for the larger sizes of lapweld pipe are being made upon manufacturers by the oil and gas producers and bookings now are so large that few of the mills will guarantee shipment much before Oct. 1. Actually, big pipe capacity is booked for the remainder of the summer. The Atlantic Gulf Corp. has placed a big order for 6-inch pipe with a West Virginia manufacturer, while another oil company has ordered 35 miles of 10-inch pipe, and the Allied Oil Co. is reported to have placed 70 miles of 10-inch pipe in New York. Oil country requirements generally still are large and practically all makers in this district are running their lapweld capacity 100 per cent. Meanwhile, demands for buttweld pipe are increasing steadily and operations are larger.

Prices Are Shaded

New York, June 9.—Although no award has been officially announced, the United States Cast Iron Pipe & Foundry Co. was low bidder on 1800 tons of 14-inch cast-iron pipe for Newark, N. Y. The price quoted on this job is said to be somewhat under the generally accepted market established recently by the reduction of $5 a ton. Another municipal job to come before the trade is that for Boston, which involves 1100 tons, ranging from 8 to 24 inches. Bids are to be closed on June 12. Export inquiries continue numerous, but as yet little of this business has been booked.

Large Line is Placed

Youngstown, O., June 10.—Valley makers of lapweld pipe continue to book good sized lots from oil country interests. The large inquiry which was placed before several pipemakers by the Lone Star Gas Co., Dallas, Tex., has been closed with a mill in the Pittsburgh district, it is heard. This inquiry originally called for 300 miles of lapweld varying from 6 to 18-inch and approximated 3000 tons. Buttweld business is at a low ebb.

Cities Need Much Pipe

Chicago, June 10.—Award of 1000 tons of cast iron pipe has been made to the United States Cast Iron Pipe & Foundry Co. by the city of Chicago and a like tonnage to the same maker by the city of Cleveland. Detroit has awarded 2800 tons of large pipe to this maker and is still considering 2700 tons of 6 and 8-inch on which bids have already been taken. Baker, Mont., has about 500 tons from the National Cast Iron Pipe Co. Bids were to be opened June 9 at Niles, Mich., on 436 tons and at Saginaw, Mich., June 17 on 300 to 500 tons. Larger cities, which have grown steadily through the war period, are in need of heavy tonnages of pipe but the only one which gives indication of covering all its needs is Detroit, which expects to continue buying steadily. It is estimated that city needs 50,000 tons during the present year to catch up with its deferred needs.

Bar Contracting is Active

Buyers in all Districts Covering Freely—Implement Trade May Enter Market Soon—Some Selling to Jan. 1

Chicago, June 10.—Inasmuch as steel bars normally represent a larger portion of the finished steel output than any other product, demand for this form is heavier now than for shapes and plates. One characteristic of the present buying movement is noticeable which is regarded as an encouraging sign as to the solidity on which present buying is based. Consumers do not hesitate to buy whatever tonnage they need but there is no tendency toward overstocking or making contracts for more material than can be used. Selling is mostly for third quarter, as most mills prefer to limit their sales to Oct. 1, but no great difficulty is experienced by regular customers in covering to the end of the year. Most present buying is on the basis of specifications with the order and contracts not specified are the exception. Agricultural implement manufacturers are not in the market but an investigation has convinced some makers that these interests do not possess as heavy supplies as had been thought and instances have been known recently of these manufacturers borrowing certain sizes from each other. If this plan is carried far it is expected to force new buying for last half use. At the same time, some implement makers have tonnages on mill books not yet specified.

Bar iron continues unchanged with consumers betraying little interest in the situation and mills operating at about capacity. In spite of the unsatisfactory condition of order books, indications of price shading are not apparent.

Demand for hard steel bars rerolled from rails is still slack, but signs are multiplying that largely increased business may be expected after the middle of the year. Reinforced concrete construction is not calling for much steel and most of the present sales are going to manufacturers, notably those engaged in making metal beds, etc.

Contracting Nearly Finished

New York, June 9.—Forward buying continues to feature the steel bar market. Not all users as yet have purchased their requirements ahead, but the majority have taken such action and it is expected that the contracting movement will be at an end before long. The usual procedure of the mills is to limit the jobbing trade to three months ahead, but interests using steel bars for manufacturing purposes in many cases are being covered for the balance of the year. Buying of steel bars for spot delivery continues good.

Tonnage is Moving Well

Philadelphia, June 10.—Steel bars again have moved well the past week both for contract and prompt shipment. Contract buyers now seem to be well covered. Iron bar business continues at a minimum and mills due to shut down by reason of the strike are unable to furnish all sizes.

Recent Improvement Continues

Pittsburgh, June 10.—The recent improvement in the specifications and orders for merchant steel bars continues and is being shared in by a greater number of makers. Export demands are numerous and some fair-sized tonnages have been booked. Automobile manufacturers are fairly free with specifications. In view of the immense crops that seem assured, and the uniform report from makers of agricultural implements that the farmers are buying more freely it would seem that a large tonnage of bars from that source may well be expected. If any price cutting is going on it is pretty carefully concealed. Demand for concrete reinforcing bars is increasing and rerolled bars of this sort now are firmly held at 2.25c mill which compares with 2.15c mill recently. Iron bars are reported to be in good steady demand.

Expecting Implement Business

Youngstown, O., June 10.—Makers of soft steel bars are well booked over the next quarter. Buyers display a willingness to place tonnages freely. It is rumored implement makers in the Middle West are nearly ready to place contracts but just what their requirements will be is not generally known.

Numerous Contracts Taken

Cleveland, June 10.—Active contracting for steel bars is going forward in Cleveland and surrounding territory. Some of the mills now are accepting contracts to Jan. 1 and relatively large tonnages are involved for that delivery. One lot of 5000 tons for a local hardware interest still is open. Another of 5000 tons is under negotiation and there are propositions under way for larger amounts. Some of the automobile plants are closing for further tonnage. Specifications also have become more active and consumers are following shipments much more closely than a few weeks ago. Steel bar prices are firm. Reports of concessions in rerolling bars persist and 2.10 and 2.15c mill are mentioned although some makers are holding fast at 2.25c.

Operating at 60 Per Cent

Buffalo, June 10.—A local interest is operating two bar mills about 60 per cent of capacity. About 1500 tons of export bars are being rolled by this mill.

Bolt Demand Stronger

Chicago, June 10.—Demand for nuts and bolts is coming out with renewed strength after something of a lull and the past week has been the best for a considerable period. Jobbers are taking on considerable tonnage of this product and automobile makers are in the market for large lots. One order recently booked was for 800,000 bolts and nuts and a number of carload orders have been taken. Makers are running at about 75 per cent of capacity. Prices are steady.

Jobbers Specify More Freely

Pittsburgh, June 10.—While the market here for nuts, bolts and rivets still is far from active, inquiries are better than they have been and it also is noted that jobbers are specifying more freely than they did recently. Some cutting in prices is going on but hardly enough tonnage is involved to affect quotations.

Shafting Buying as Needed

Pittsburgh, June 10.—Although the movement of cold rolled shafting is on a somewhat larger scale than it was recently, there are no signs of buyers getting away from a policy of covering merely actual requirements. Orders rather than contracts constitute the bulk of current business. The principal demand is from the makers of automobiles. Mill operations are not above 50 per cent.

Resale Lots

Less Dominating in Ferroalloys—Pittsburgh Inquiry Better

New York, June 9.—Resales no longer are so dominant a factor in the market for manganese alloys as has been the case up to recently. Off-quality ferromanganese which during the past week has been sold by a producer at $115, delivered, only a few weeks ago could have been had at resale at considerably less. At the same time very little business is being done, and, in fact, the market is largely nominal. Domestic producers continue to ask $125, delivered, for 80 per cent metal, while importers have quoted $121, c.i.f. Atlantic tidewater on several small inquiries which have come into the market recently.

Large sales of spiegeleisen which were made by producers recently at as low as $25 at the furnace for 16 per cent metal, evidently have had the effect of wiping out the resale market on this metal. The situation now reflects a stronger tone and it is considered doubtful whether any more spiegeleisen could be had at as low as $25. In the absence of business, however, the market is quoted nominally at $25 to $27.50.

Better Inquiry is Noted

Pittsburgh, June 10.—More interest is being taken in ferroalloys by consumers but the larger demand has not brought about an appreciable strengthening in prices. Some buyers still claim to be able to buy 78 to 82 per cent ferromanganese for less than $90, delivered. Few producers are inclined to sell under $100 and at least one maker is quoting $125, delivered. Sales of 70 to 75 per cent metal have been done at better than $90 and some 75 to 78 per cent has changed hands at $95, delivered. A valley consumer is out for 300 tons of 80 per cent for July. In explanation of a reported sale of 80 per cent ferromanganese at $1 per unit, the government permitted the holder to sell the tonnage at the best price offered which was $80 a

ton. A firm offer of $1 per unit for 1000 tons of 80 per cent ferromanganese recently was made but found no sellers willing to accept.

Little is going on in spiegeleisen, although a fair sized resale tonnage of 18 to 21 per cent is understood to have been gone recently at $27. Makers are quoting from $30 to $35, furnace, without sales.

Some makers of 50 per cent ferrosilicon are holding for $90, freight allowed, but $85 seems to be maximum and some producers have accepted orders at $80. Resale metal generally has been selling around $75 and in instances for slightly less.

Not much is going on in bessemer ferrosilicon and new business at higher than $45, furnace, for 10 per cent material is not easily put through. A fair sized resale tonnage of 12 per cent was moved at a lower price delivered than is quoted by producers at the furnace. A small resale tonnage of ferrotungsten was sold in this district at $1.10 per unit; makers are quoting as high as $1.30 per unit on new business but probably would not refuse $1.25.

Plate Orders Are Better

Tank Makers and Structural Shops Buying for Forward Delivery—Six Tankships up for Bids—Standard Oil Supplying Needs

Philadelphia, June 10.—While plate demand has not assumed rush propositions, there has been a conspicuous improvement in volume the past week. The Lukens Steel Co. booked more tonnage in that period than in any other week since the armistice. This improvement is reflected in reports from all the company's offices. Various requests for contracts to the end of the year have been declined in expectation of higher prices. The Lukens company's advance of $2 per ton is being maintained and sales at this figure include not only specification plates but ordinary tank plates. Some other plate makers report a similar improvement. An interesting development of the past week is a request for bids by several shipyards for the steel for six 3000-ton tankers for an American oil company. Sales of plates last week include good sized tonnages for structural purposes.

Prompt Demand Improves

New York, June 9.—Although demand for steel plates in this district has improved, there is very little call for future shipment. Practically all the plate tonnage wanted is for immediate shipment. Much of it is in connection with definite jobs, but the demand for stock replenishment is improving.

Contracts have been placed with independents by the Humble Oil Co. of Texas for 2700 tons of steel, comprised chiefly of plates, for tank construction. The Standard Oil Co. has finally decided to produce itself the 6000 tons of plates for which it recently was in the market.

Still the Dull Spot

Pittsburgh, June 10.—No material improvement has developed in plates with makers here and mill operations remain at a low ebb. Shipbuilders appear to have sufficient supplies to carry them for the next few months and the lack of new railroad car and locomotive business keeps the demand from these sources to small proportions. Tank manufacturers are getting a fair amount of business and are fair buyers. The Phoenix Iron Works, Meadville, Pa., recently booked orders for the stills and agitators for two new oil refineries for which 1500 tons of plates were required. It is understood this business went to a Buffalo steel company at the full price of 2.65c, Pittsburgh. It is understood that Pacific coast shipbuilders are inclined to fight the cancelation of Emergency Fleet corporation orders for boats, work on which was suspended some time ago. One steel company here has about 100,000 tons of plates held up pending the outcome of this controversy.

Rolling for Export

Buffalo, June 10.—Favorable plate business is reported by a local mill which is operating at 60 per cent. It is rolling about 2000 tons of plates for export.

Tank Makers Buying

Chicago, June 10.—Considerable demand for steel tanks seems to be developing, as manufacturers of these containers have been the most active factor in the plate market recently, with the exception of shipbuilders. The steel for two ships on the Pacific coast, which had been suspended and recently were reinstated, involving about 7000 tons, has not yet been awarded. Indication is that these represent about the last ships to be reinstated and that the remainder of the tonnage held up by the armistice probably will be canceled. The Japanese shipbuilding program is to be continued, however, and large tonnages of plates, which can be obtained only in this country, are expected to be bought soon.

Sheet Market is Firmer

Concessions up to $4 Per Ton Less in Evidence—Tonnage Grows But Mill Operations Little Changed

Chicago, June 10.—Recent shading of prices on black and galvanized steel sheets seems to have come to an end, the mills responsible for this action having accumulated sufficient tonnage. While most of this tonnage was taken at $2 to $3 per ton under the prevailing price a few instances are known where an extreme of $4 under the market obtained in cases of strong competition. Demand for steel sheets is excellent. Present sales are being made on the basis of specifications with the order, no contracts yet being entered. In some instances mills are booked seven to eight weeks ahead. The leading independent sheetmaker here now is operating at capacity.

Eastern Demand Moderate

Philadelphia, June 10.—Demand for sheets in this district is not as good comparatively as for other products. Some business is being done for prompt shipment.

Business Still Expanding

Pittsburgh, June 10.—Specifications for sheets continue to increase and mail orders are reported to be extremely satisfactory. Some makers report specifications during the past week to have been the best in any similar period in the last nine months and considerable satisfaction is derived from the fact that an increasing percentage of specifications and orders call for black, galvanized and blue annealed stock. No important price cutting is observed in black sheets but in galvanized material makers have had to compete more or less with some resale tonnages. It seems, that a corrugating company in Ohio secured a rather good sized tonnage of galvanized sheets in the adjustment attending the sale of one sheet manufacturing plant to a larger company. This corrugating company has been quoting a price as low as $5.50, Pittsburgh, in various parts of the country and some makers have met that price. It is believed this low priced material now has pretty well passed into consumption. The Willys-Overland Co. has not yet closed on its last half requirements of sheets and as far as can be learned, the Ford Motor Co. still is to place its requirements for that period. Mill operations are still around 65 per cent as makers generlaly have not accumulated very much tonnage.

Orders Are Better

Youngstown, O., June 10.—Present conditions point to contract buying of various grades of sheets before many weeks. Rumors are heard that considerable price cutting is being done by sheet producers in nearby districts. So far as is known, valley makers are adhering to present market levels. A good quantity of business, mostly spot, came to the valley last week which has given makers a well-balanced rolling schedule for at least two weeks ahead. Included in the week's bookings is a large tonnage of special galvanized sheets for shipment to Austrialia. The specifications call for the rolling to 18 gage, 120 inches long, which are to be galvanized and formed with 16 3-inch corrugations per sheet. The mill which will roll this order is one of the few in this country adapted to this class of work. Among the inquiries, which came to the valley this week, is one for 100 tons of galvanized for China.

Structural Jobs Numerous

Larger Proportions of Inquiries Being Closed—Recent Bookings Exceed Shop Capacity—Fabricators Stocking up Plain Material

Cleveland, June 10.—The structural market in the Cleveland district continues active. Many small contracts were let during the past week and inquiries were received for tonnage ranging from 500 to 2000. Structural steel manufacturers and fabricators are figuring on scores of fair-sized jobs. Building operations are going ahead on an ever-increasing scale. The Nickel Plate railroad came into the market this week for 500 tons of bridge work, while the Standard Oil Co. is seeking 500 tons for tank foundations at Cincinnati. The largest structural contract let was 1000 tons for a building for the Detroit Seamless Steel Tube Co., awarded to the Whitehead & Kayles Co. Among the larger contracts on which bids are being taken are the following: Building for the J. M. & L. A. Osborn Co., Cleveland, 600 tons, and additions to the plant and a new enameling building for the Cleveland Metal Products Co., Cleveland, 500 tons. The bulk of the business closed during the past week involved small tonnages. The State Savings & Trust Co., Akron, O., will need 1500 tons for its new building; the Crucible Steel Castings Co., Cleveland, requires 600 tons for a new building, while the Hydraulic Press Mfg. Co., Mt. Gilead, O.; the American Road Machinery Co., Delphos, O., and the Masfield Tire & Rubber Co., are making inquiries for fair-size tonnages for new buildings.

Eastern Market Improves

New York, June 9.—Improvement continues in the local structural market and some sizable jobs are being placed. A fairly good number of small lots are up. Government work makes up a considerable portion of current inquiry. Possibly the latest tonnage of this character is that required for a aircraft storage building at the Philadelphia navy yard. The lot involves 1800 tons, which will be closed June 25. The bureau of yards and docks is also in the market for 600 or 700 tons for 12 small storehouses in Virginia, bids to be closed on June 18.

Ship Steel is Placed

Philadelphia, June 10.—Orders for ship shapes were placed the past week with eastern mills and 10,000 to 12,000 tons of similar business now is pending. While shape demand has improved, there is still much to be desired in the way of tonnage. Ordinarily requirements are confined largely to small lots and for quick shipment. There is, however, a fair demand for contracts and some have been taken on for third quarter from fabricators. Not all mills, however, are taking contracts. Actual lettings are still backward.

Actual Business Less Active

Pittsburgh, June 10.—Inquiry for shapes still is extremely brisk but actual bookings in the past week or so have not been quite so heavy as in the preceding week. Figures prepared by the Bridge Builders & Structural society show that lettings in the last week of May rose to within a few thousand tons of the tonnage upon which bids were asked. Contracts for that week actually exceeded by several thousand tons the theoretical shop capacity but this does not mean that fabricators are accumulating much reserve business as most of them have been short of business.

Demand is Increasing

Chicago, June 10.—Building projects are coming into the market in larger number. Fabricators say much inquiry is coming to them but quotations at the present level frequently result in the project being given up, although several undertakings have been reinstated after such action had been taken. Fabricators are replenishing their depleted stocks of plain material in a conservative way and this business is offering mills considerable tonnage. The steel for the Wells street bridge, Chicago, 2500 tons, still is pending, as is the material for the Michigan avenue approaches. Drawings have been submitted on the Crerar library building, Chicago, 2300 tons. A building at Minneapolis for the Northwestern Telephone Co., involving 1000 tons, which was up about a year ago and then was withdrawn, has again become active.

CONTRACTS AWARDED

Factory building for the Pacific Steel & Boiler Co., Chicago, 375 tons, to the Worden-Allen Co.

Addison street bridge for the city of Chicago, 240 tons, to the Milwaukee Bridge Co.

Candy factory Long Island city, 2500 tons to George A. Just.

Factory building, Greenwich street, New York, for Lehr & Kink, 2500 tons to Levering & Gerrigues.

Reconstruction Sherry's restaurant Fifth avenue, New York, 900 tons to Bethlehem Fabricators.

Building for the Electric Steel & Forge Co., Cleveland, 200 tons, to Fort Pitt Bridge Works.

Building for U. S. Alloys Co., Niagara Falls, N. Y., 200 tons, to Lackawanna Bridge Co.

Plant for Lehigh Portland Cement Co., Mitchell, Ind., 400 tons, to Lackawanna Bridge Co.

Building for Detroit Seamless Steel Tube Co., Detroit, 1000 tons, to Whitehead & Kayles Co.

Building for Fisher Body Co., Detroit, 300 tons, to Russell Wheel & Foundry Co.

Apartment house on Seventy-second street, New York, 600 tons; to Belmont Iron Works.

Stockhouse for Lehigh Portland Cement Co., Oglesby, Ill., 450 tons to Worden-Allen Co., Milwaukee.

Pulp and paper mill plant for Escanaba, Mich., Power & Paper Co., 400 tons to Worden-Allen Co., Milwaukee.

Addition to structural shop, Bucyrus Co., South Milwaukee, Wis., 200 tons to Worden-Allen Co., Milwaukee.

Shop addition for Pacific Coast Boiler Co., Waukegan, Ill., 250 tons to Worden-Allen Co.

Machine shop addition for Stover Engine & Machinery Co., Freeport, Ill., 100 tons to Worden-Allen Co.

CONTRACTS PENDING

Additions to present plant and new enameling building for the Cleveland Metal Products Co., Cleveland, 500 tons, bids being taken.

Wells street bridge, Chicago, 2500 tons, bids in.

John Crerar library, Chicago, 2300 tons, drawings completed.

Factory for the American Wire Fabric Co., Blue Island, Ill., 400 tons, bids being taken.

Building for the Northwestern Telephone Co., Minneapolis, 1000 tons, project revived.

Factory building for the Corn Products Co., Argo, Ill., 700 tons, bids being taken.

Tri nitro toluol plant, Fort Mifflin, Pa., 200 tons, bids being taken.

Fitz hotel, Atlantic City, concrete construction 200 tons of structural material required.

Building for Moline Plow Co., Moline, Ill., 500 to 600 tons, bids being taken.

Building for State Savings & Trust Co., Akron, O., 1500 tons; bids to be taken soon.

Bridges for Nickel Plate railroad, 500 tons; bids being taken.

Tank foundations for Standard Oil Co., Cincinnati; 500 tons, bids being taken.

Building for J. M. & L. A. Osborn Co., Cleveland, 600 tons, bids being taken.

Building for the Austin Co., Avenel, N. J., 130 tons, bids being taken.

Aircraft Storage building at the Philadelphia navy yard, 1800 tons, bids to be closed June 25.

Twelve storehouses for bureau of yards and docks, Virginia, 600 to 700 tons, contracts to be closed June 12.

Higher Prices

Favored by Independents in Wire Products—Demand is Mentioned

Pittsburgh, June 10. Specifications and orders for wire products now are averaging better than 80 per cent of mill capacity and the fact that buyers still are inclined to place contracts covering at least the next three months indicates their belief that they are satisfied with present prices. Talk persists that the next change in wire products prices will be up rather than down. Most manufacturers here are indifferent about large forward bookings in nails, and are urging sales departments to concentrate on the more remunerative products. Current demands are well diversified among the various products. Prices generally are firm, although it is understood some business was lost to the manufacturers in the Pittsburgh district on galvanized wire for shipment to St. Louis because they refused to shade $3.70, Pittsburgh. Some irregularity also is noted in cement coated nails as some of the smaller makers are reported to be accepting $2.75 per count keg while others are holding to $2.85.

Improved Demand Maintained

New York, June 9.—Demand for wire products generally continues to be maintained at approximately 85 per cent of capacity. Some makers report that new orders have been coming to them at an even better rate than this figure indicates. There is considerable sentiment among manufacturers favoring an advance in the price on wire nails. Some makers say that they have been selling in red ink lately, but that they do not propose to do this much longer. The inclination is to look to the leading interest to take the initiative in advancing its figure, but this producer has shown no signs of an intention to increase the price.

Exporters Anticipating Big Orders

Agents Foresee Some Slight Advances in American Prices—Ocean Freight Rates Weaken and Shipping Business Easier—Italy is Purchasing Here—Many Solutions Offered for the Problem of Foreign Credits

NEW YORK, June 9.—Export sales are maintained and while there has been a consistent improvement the merchants are not at all satisfied with the speed of the recovery. Backed orders are usually in very small tonnages and the indications are that the big business which might be expected is holding off for various reasons. The possibility of a delay in negotiating peace and the concomitant disruption such a contingency will cause and the persistent sentiment among foreigners that prices have not yet reached their lowest levels, are factors which still block the efforts of sales managers. There is today, however, a general belief among the active agents in the market that prices will not recede and that the indications are that they will advance in the not distant future.

The $10 advance in heavy rails for export which was put in effect about the time the railroad administration refused to accept the Peek schedule, has caused no little concern. No sales were made at the higher figure and after business was held off for several weeks it was discovered that foreign sales were being consummated around $51.75 f.a.s. New York, on $47 mill for open-hearth rails. Following this the mills adopted the practice of holding out for the higher price on small orders. Within the past week one of the largest mill agencies quoted $56 including the usual accessories of splice bars, bolts and spikes. The accessories would be valued at approximately $3.50 which would make the rail price around $52.50 f.a.s. New York. Even this price is more than the quotation of $47 made to the railroad administration, and foreign buyers now insist they should be quoted on a parity with domestic prices. This dispute has grown to such proportions that many of the large rail inquiries are now being held up.

Makers are today inclined to hold firm on their quotations and a hint has been given the export agents that the domestic price is due for an advance of $3 a ton. When this happens it is believed the desired effect will be created upon foreign purchasers.

Exporters have also been watching with interest the attitude assumed by the European neutrals over the commercial blockade of Germany. Norway, Sweden, Denmark and Switzerland, it is heard, will refuse to continue this blockade even should Germany fail to sign the peace terms. In such an eventuality, the exporters are convinced that the war trade board would immediately reimpose the drastic trade restrictions upon these neutrals which were in force during the war. At the moment that would have little effect upon the exports of iron and steel. Norway and Sweden are purchasing American automobiles, and Norway has been sending in inquiries for sheets, bars, wire and tin plate. This business is not yet in any great volume.

Diversified Sales Are Made

Despite these disquieting influences the export merchants report that a better sentiment exists both here and abroad. While orders and inquiries are in small tonnages, sales cover miscellaneous products. Some of the Far Eastern orders now pending call for about 200 tons of bars, and a similar quantity of light rails. Japan, individually, has been purchasing sheets, plates, shapes, bars and wire products. New inquiries noted call for 60-pound rails and some bars for the Far East. No tonnage was named, a quotation of price only being desired. India wants a small tonnnge of sheets and has bought 200 tons of bars. An inquiry from Africa for approximately 100 tons of bars has been received.

The Far East also has sent in inquiries for 5000 cases of tin plate and approximately 150 tons of nails. The sale of 200 cases of tin plate to the Far East is reported. South America has purchased 200 tons of light rails, and approximately 200 cases of tin plate. Argentine has been purchasing bars, and Brazil has taken plates, shapes and bars. A new South American inquiry for some 200 tons of galvanized and plain wire has been received, as well as an inquiry for a small tonnage of barbed wire. Many of the South American inquiries call for two and three hundred tons each. The East Indies have purchased bars and shapes in limited quantities.

Italy has been inquiring for 1000 tons of bars and 5000 tons of plate. The Balkan states have asked for some 20,000 tons of heavy rails. Such sales depend upon extensive financing. Belgian business likewise depends upon proper financing and there are indications that some European connections will be made before long. Even though Belgian business has been held up while financial matters are being arranged, quotations have been asked on wire, tin plate, shapes, plates and bars. An inquiry for 5000 cases of tin plate has been received through London but it is understood that the material is not intended for England. Glasgow, however, has purchased 100 tons of bars.

France has been inquiring for shapes, plates and bars. American engineers, it is reported, have received the contract to rebuild some of the destroyed cities in France. Exporters are finding it difficult to judge of the value of many of the European inquiries. It is felt that some of them are merely feelers, with the design of securing the foreign agency for the American product. All such inquiries are nevertheless being followed up with avidity.

While American prices are lower, and discriminations in ocean freight rates are being rapidly removed, foreign sales often have been blocked by conditions of exchange. When the credit situation is corrected, it is believed an advance in export quotations may be expected to bring the price of American iron and steel more nearly to a parity with those quoted by foreign producers, especially England. Exporters at this moment foresee a stiffening of prices. Rails and galvanized sheets, are among those products in which an advance has been mentioned as likely.

Shipping accommodations are much easier and the ocean rates show a tendency to decline. The rate to United Kingdom ports is now $20 a gross ton, whereas previously $1 per 100 pounds would be accepted. It is believed that were any considerable tonnage offered for England a rate of $18 could be obtained. The rate to Constantinople has been reduced from $90 to $70, and to Italy it is now possible to obtain the shipping board rate of $1.60 per 100 pounds. The rate to Alexandria has been reduced from $60 to $40. The rates to Java, Japan, Manila and China remain the same. New rates have been quoted to European ports on shipping board vessels. From North Atlantic ports to Rotterdam, Antwerp, Havre and Bordeaux the rate is $1.25 per 100 pounds; to Marseilles, Cette, Genoa, Naples, Balboa $1.60; to Copenhagen and Gothenburg $1.50; to Stockholm $1.75; to Lisbon $1.50; to Barcelona and Valencia $1.85, and to Holsingfors $2. The customary heavy lift scale is added for articles weighing more than 4480 pounds each.

Reinstate Service Fund

Washington, June 10.—Through action taken by the senate appropriations committee the item calling for $272,000 for the continuation of the United States employment service until July 1 has been reinstated in the general deficiency bill and will go to the floor of the senate shortly for consideration. Representative Blanton several weeks ago was responsible for the item being removed while the bill was on the floor of the house and it is expected that the same item will be stricken out by senators who are opposed to the employment service being continued.

The H. & H. Foundry & Machine Co., has been incorporated under the laws of Delaware with $1,000,000 capital stock, as a result of the taking over of the John Davenport Co., Stamford, Conn.

Plan Export Groups to Aid Trade

Pools May be Backed by Central Securities Corporation in Which Public Can Invest—Method of Handling Foreign Sales of Cotton Suggested as Means for Financing Shipments—Congress Studies Situation

WASHINGTON, June 10.—With commodity balances of the United States running to the extent of $400,000,000 a month in excess of what Europe and the outside world are shipping to this country, members of congress have become disturbed over the situation, realizing that it will not be possible for the United States to continue to make such shipments unless long-time credits are arranged for the European countries.

The unrest of Europe is held to be due in no small part to the situation, which also is being studied by financial interests and the federal reserve board. The plan proposed is the creation of group export corporations for steel, copper, other metals, and wood, tobacco, etc., similar to that organized to handle foreign sales of cotton.

As now planned the group corporations would be backed by a central securities corporation, the latter drawing its funds from the investing public, which would furnish perhaps hundreds of million dollars to finance the shipments of steel, copper, etc., to countries which have been at war, so as to permit them to return to work and pay off debts they owe the United States.

Those interested in the matter, which admittedly is of extreme importance, are watching the operations of the International Cotton corporation with a view to making use of the result in the organization of a similar working body.

The war finance corporation is said to be ready to assume obligations of the export corporations if the public does not, and both Republican and Democratic members of congress say they hope congress soon will make an appropriation necessary to take up the work. Senator Owen, Democrat, former chairman of the committee on banking and currency, attempted to have legislation of this kind enacted at the previous session of congress, but the measure failed to receive consideration.

In a letter to Senator Owen, urging the passage of the required legislation, Secretary of Commerce Redfield said the department of commerce frequently receives letters protesting against embargoes in one or another country against purchasing in the United States. The conditions, however, he pointed out, which cause these restrictions are supremely exigent. For example, in Italy today it was shown that the difference of exchange causes a tax of 40 to 60 per cent on merchants who would buy from the United States In a lesser degree this is true elsewhere.

"The nations that need our supplies, both of raw materials and finished goods, can not pay us in gold, can not render adequate services in payment, and can not fully pay us in goods," said Secretary Redfield. "This applies both to past and present debt and to present and future purchases. We can meet this problem by purchasing their securities, and, so far as I know, this is the only key adequate to unlock the problem.

"This course, furthermore, has a three-fold economic advantage; we receive interest upon the investment; we obtain the business normally arising out of the operations conducted by American capital, thus adding to our export trade upon a safe basis; and we develop the wealth of the countries in which these operations are carried on, thus adding alike to their power to pay their present debt to us and to make further purchases from us."

Mr. Redfield said that credits authorized through the war finance corporation offer sufficient means in a certain way for meeting the export necessities of the country, but do not provide buying power on the other side, held to be the crux of the situation, nor directly help to forward the development of the wealth of those countries or give to this country any control over their purchases.

Secretary Redfield says regarding the mechanism for furnishing knowledge of and a market for foreign securities, which will have to be bought:

"It seems more consonant with our principles and our practice in the past that this matter should be handled purely by private enterprise and capital. Yet I recognize that we can not apply the reasoning of the past to the problems of the present, for that experience and those principles were based upon traditions and conditions which have ceased to be. It is with some force urged that in order to secure public confidence in this novel business of buying foreign securities we must have the assurance that would come not merely from the oversight but from the actual participation by the government in the ownership and direction of the organization which is to perform so novel and yet so necessary a function. I find myself increasingly inclined to the belief that this may be desirable and to the acceptance of the thought that it may be necessary."

It is the opinion of Mr. Redfield that instead of making the department of commerce the sole agency of the government, the major part could be given to the treasury department, though it would be "proper and right that at least one director and some definite participation should be given to the department of commerce."

The tentative draft of the bill designed by Senator Owen would give the government one-fourth of the capital stock of the proposed organization and it would be limited to an equal proportion of the board of directors.

Investigation of Steel Prices Unlikely

WASHINGTON, June 10.—The possibility of an investigation of the action of steel manufacturers in submitting uniform bids on government steel purchases appears to be remote. The department of justice, after a study of the question, apparently has decided to go no further and the house committee on appropriations so far has failed to follow a lead given by Director General Hines. The latter, at first said to be advocating a thorough probe of the subject, has since declared he did not contemplate an investigation and the navy department appears to let the matter drop with its requisition upon the Carnegie Steel Co. for 14,000 tons of steel needed to start its modified battleship construction program. Later, when congress begins its active probe

of government expenditures, an investigation may be made that will run the whole scale of commodities, but how far that would go in disclosing any combinations of manufacturers in the steel or other industries is, of course, not known.

Director General Hines, in appearing before the house subcommittee on appropriations a week ago, said, as release of the testimony discloses, that the steel interests "insist with the greatest emphasis that they need an increase from 56 per cent to 79.5 per cent over prewar prices in order to enable them to continue going, and they succeeded in getting the indorsement of the industrial board of that view." Mr. Hines, in commenting to the committee reiterated his oft-expressed opinion that his "own judgment was that those prices were unnecessarily high." As far as perusal of the testimony discloses, that was the only reference to the industrial board and the resulting prices of steel, although steel is mentioned in several passages as being high..

Higher Rates Raise Prices

In discussing the question of additional revenue for the railroads, Mr. Hines said:

"The transportation rates are so basic in their influence, affect everything in the country, that they do enter into the cost of everything else, and an increase in them is likely to be seized upon as a pretext for an increase in the price of everything else. Take, for example, steel. If we raise the rates for ore, the rates for coal, and the rates for pig iron, we are going to find the claim that there should be a further increase in the price of steel because they will say the cost of pig iron has been increased through an increase in the transportation rates on raw materials, and, therefore, the cost of steel has been increased, and that is likely to be reflected in every article that is manufactured out of those things, and we will find the same condition reflecting itself, more or less, in other lines of business."

The director general's statement was made in the discussion of raising freight rates as a means of helping finance the carriers. Here again, as he has done frequently of late, Mr. Hines insisted he cannot raise the rates without jeopardizing business. He said "the costs are already on such a high basis as to be detrimental to the active resumption of domestic business and certainly detrimental to the active resumption of foreign business."

Materials used by the railroads require an expenditure now of from $1.50 to $1.70 whereas they used to be $1, the director general told the committee. This increase includes the cost of wages, Mr. Hines pointed out, and against this expense the railroads receive now only $1.25. Of course, both he and Swager Sherley, director of finance, explained how an increase in railroad business would increase the net earnings, which, in theory at least, would offset the advance in the price of materials. In further discussing the cost of materials and supplies, Mr. Hines said:

"The two great reasons for the increase in expenses are the increases in the cost of material and supplies and the increase in the cost of labor. As to material and supplies, they have been going up for the railroads as well as for everybody else, and that increase has been shown in an accumulative way. Not only has that been due to the fact that prices have been progressively going higher until a comparatively recent date, but, in addition to that, the way railroad accounts are kept, generally speaking, is such that materials are bought considerably in advance of the time they are used, and they are generally shown in the accounts at the prices at which they were bought. Then, when those materials are used for operating purposes, they are charged into the operating expenses not at the current prices of such materials but at the prices at which they were bought, or, possibly, at an average price, representing the average of all the prices of the materials in stock. The result is that the expense for materials and supplies to the railroads began increasing very rapidly in 1916, due to war influences, but those increases did not actually begin figuring in the operating expenses to a great extent until several months later. Then, when they began to figure in the operating expenses, they began to figure in a progressive way, because more and more the stock of materials which was being drawn on for operating purposes has represented stock bought at higher prices, so that the railroad administration has not only had this piling up or increase in prices which everybody has suffered from, but it has been using a stock of material whose average cost has been increasing, and which has been losing gradually the benefit of the part of it which was bought at relatively low prices."

Government Offers Metal

Approximately 3100 tons of northern low phosphorus pig iron and approximately 205 tons of nickel steel ingots are offered for sale by the Philadelphia district salvage board for bids June 16. The material is located at the plant of the Standard Steel Works Co., Burnham, Pa., where inspection may be made.

Bids also will be received by the district ordnance office, 82 St. Paul street, Rochester, N. Y., June 19, on 1708 tons of 75-millimeter forgings (Mark 1) which may be inspected at the plant of the Batavia Steel Products Corp., Batavia, N. Y.

Engineers Meet

Banquet and Visit to Shipyards Enjoyed by Cleveland Societies

More than 300 engineers of northern Ohio attended the combined annual meeting of the Cleveland Engineering society and the quarterly convention of the Cleveland Section of the American Society of Mechanical Engineers held at Cleveland Tuesday, June 10. At the morning session at the Hollenden hotel S. T. Wellman read a paper on the development of the open-hearth charging machine. Mr. Wellman described the old system of hand charging, and mentioned the difficulties encountered in designing a machine to do the work. His first charging machine, operated by hydraulic power, was not entirely satisfactory but it paved the way for the first electric machine which was installed in the Wellman Steel Works, Thurlow, Pa.

At 11:30 a. m. the members and guests of the societies boarded the steamer CITY OF BUFFALO for a two-hour lake trip to Lorain. Lunch, provided by the American Ship Building Co., Cleveland, was served on board. Shortly before the boat arrived at Lorain, J. C. Workman, of the American Ship Building Co., gave a resume of the work of the company during the war and outlined the scope of shipbuilding operations at the Lorain plant. Upon arrival at Lorain, the engineers spent several hours inspecting the shops and yards under the direction of 12 members of the company who acted as guides.

Approximately 250 were present at the banquet held in the ballroom of the Hollenden hotel. Willard Beahan, assistant chief engineer, New York Central Lines, presided as toastmaster. Dr. C. S. Howe, president Case School of Applied Science, Cleveland, conferred honorary memberships in the Cleveland Engineering society upon Worcester R. Warner of the Warner & Swasey Co., Cleveland, and Charles F. Brush, electrical engineer, Cleveland. The principal speaker of the evening was M. E. Cooley, president of the American Society of Mechanical Engineers, who declared that during the past 40 years Americans have given so much attention to science and so little to the classics that the humanities have been drowned out. The country is at the mercy of the forces of science that have been unloosed, and it is the duty of engineers to bring about social reforms before the nation is swept by radicalism. E. S. Carman, chief engineer, Cleveland Osborn Mfg. Co., Cleveland, and president-elect of the Cleveland Engineering society, described the industrial condition of Europe.

Industrial City

For Auto Manufacture Planned by Former Ford Men

Detroit, June 7.—C. Harold Wills and John R. Lee, formerly production engineer and welfare director, respectively, of the Ford Motor Co., together with associates yet to be announced, have purchased 3600 acres with four miles of frontage on St. Clair river, at Port Huron, Mich., as the site of a large motor car plant. The product will be a car designed by Mr. Wills. Provision has been made for the establishment of a model industrial center with an elaborate housing plan being worked out by Mr. Lee.

The General Motors Corp. has broken ground for its 15-story laboratory and office building at Cass avenue and West Grand boulevard. The building will represent an expenditure of $5,000,000.

The Detroit Stove Works has increased its daily capacity to 350 gas ranges, 150 coal and wood stoves and 30 furnaces. The company also produces 800 car heaters and from 500 to 1000 electric stoves a year.

The Puritan Machine Co., Detroit, has purchased the stock of the Detroit Axle Co.

An experimental station for artillery tractors has been established in Detroit by the government, with Don Ferguson, consulting engineer, in charge. Efforts will be made to standardize the army tractor.

The L. A. Young Industries Inc., has purchased the plant of the Patterson Mfg. Co., at Holly, Mich., manufacturers of automobile cushion springs.

The automotive industry in Michigan still is receiving a large amount of government business. During the last two months orders aggregating $2,000,000 have been placed for motor cars, tractors and similar equipment. The Packard Motor Car Co. has one order of $379,888 for motor car parts.

The All-Power Truck Co., of Detroit, organized during the war, has moved into larger factory quarters.

The Wright-Fisher Engineering Co. has been organized to do a general business in designing tools, automotive equipment, metallurgical engineering and to handle the sales of established engineering products. James A. Wright is president.

United Broach & Machine Co. has been chartered to take over the business of the Crystal Alloys Corp.

The Mutual Electric & Machine Co. has purchased the plant formerly occupied by the Doble Detroit Steam Motors Co., which has 100,000 square feet of floor space. The company manufactures electrical devices.

Arranging Wire Merger

Boston, June 10.—The Clinton Wire Cloth Co., Boston, has notified its stockholders that it had entered into negotiations with New York brokers for the sale of the company, and that the necessary two-thirds of common stock had been pledged to the plan. It is understood this is the first step of a merger of wire interests, which is being consummated through Liggett and Drexel of New York.

The Wickwire Steel Co., Buffalo; Wright Wire Co., Worcester, Mass.; the Clinton Wire Cloth Co., Boston, and the Morgan Spring Co., Worcester, Mass., have been mentioned in newspaper reports as parties to a probable merger. Officials of the Wickwire Steel Co. and the Wickwire Bros., Inc., Cortland, N. Y., declare, however, that they are not interested in the combination and have no intention of entering it.

Plans Additional Mills

The Cannonsburg Steel & Iron Works, Cannonsburg, W. Va., manufacturers of black sheets, is laying foundations for two additional mills, which, when completed will give the company eight mills an increase in capacity of 25 per cent.

To Make Tire Molds

The Cleveland Rubber Mold Foundry & Machine Co., at present located at 406 Schofield building, Cleveland, has plans in the hands of the Austin Engineering Co., engineer, for the erection of a machine shop, pattern shop and foundry on a 10-acre site which has been recently acquired on Warner road. Plans call for the erection of two buildings, each approximately 120 x 240 feet. The company expects to manufacture iron cores and molds used in the production of rubber tires. I. R. Davies is president.

Report Surplus Steel

Washington, June 3.—More than 1,000,000 pounds of steel at the Colgate warehouse have been certified to the general branch of the surplus property division of the war department and steps are being taken to dispose of it, while 1,141,375 pounds of carbon merchant bars have been found at the plant of the Spicer Mfg. Corp., South Plainfield, N. J., which is expected to be certified as surplus. In addition to the foregoing, 231,000 pounds of chrome vanadium steel at Detroit has been certified as surplus for disposal.

The Nonferrous Metals

Copper Lead Spelter Tin

	Copper	†Spot Straits, tin	‡Lead, New York basis	Spelter St. Louis basis	Aluminum	Spot antimony
June 4	16.75	72.50	5.25	6.125	33.00	8.375
June 5	16.75	72.50	5.25	6.15	33.00	8.375
June 6	17.00	72.50	5.25	6.15	33.00	8.375
June 9	17.25	72.50	5.25	6.20	33.00	8.375
June 10	17.50	72.50	5.25	6.30	33.00	8.375

†United States Steel Products Co.'s price to consumers, dealers and jobbers; future Straits for shipment from Orient after ban, now 50.75c c.i.f. New York.

‡American Smelting & Refining Co.'s price.

NEW YORK, June 10.—As in iron and steel, so in nonferrous markets and particularly in copper and brass, industrial demands have been increasing rapidly in the past two weeks. In less time than this copper has advanced a cent and today was quoted 17.50c to 17.62½c, delivered, on electrolytic. Buying lately has been good by brass rolling mills for the first time this year. Earlier when copper buying was brisk for several brief periods, it was largely for wire mills. Electrical business in copper has been good.

The advancing copper market has brought an increasing flow of inquiry to brass mills the past few days, as it is realized that sheet, rod and tube in this material, as well as castings, must soon make another jump. For a number of months manufacturers have enjoyed such cheap brass, compared with the decline from war prices in this metal and others, that there was no little incentive to buy ahead so long as the market remained quiet, but now the circumstances are changed.

Opinions differ as to the amount of copper involved in recent sales, some saying that it is larger than in ordinary times before the war, so far as domestic trade is concerned, while others say otherwise, but certainly the trade is big compared with anything done in recent months. The market is controlled by producers, all of whom are in strong position.

Judging by the size of sales of government tin, 544 tons in the first week of June, the 1071 remaining tons will be sold in a few weeks at the most, so that an open market is likely before the end of the month.

Spelter is strong with inquiry somewhat, but largely on sentiment. The same condition is true of lead. Aluminum is unchanged.

How Electric Furnaces Are Built

In a Central Ohio Plant Construction of Resistance Furnaces Has Been Reduced to a Manufacturing Basis, Including Transformers, Switches and Other Auxiliaries—Large Floor Space Necessary

THE electric furnace in the present stage of its development is an instrument of refinement rather than one of production. Its use today is largely confined to foundries where high grade steel castings are turned out. It is also making inroads in the nonferrous melting and steel heat-treating fields. For the latter purpose comparatively low temperatures are required and these conditions present an opportunity for employing the resistance type furnace under almost ideal conditions. A furnace of this type has been developed by the Electric Furnace Co., Alliance, O. It is designed for melting nonferrous metals and other work not requiring excessive temperatures, and when equipped for automatic operation is claimed to be especially suitable for the steel treating. Its most novel feature is its heating element which is built in the form of a trough encircling the inside of the furnace above the hearth. This trough is filled with granulated carbon to form a path for the electric current. The construction of this trough with its supports and its charge of carbon is particularly interesting in view of the modern plant which has been built at Salem, O., for the exclusive manufacture of these furnaces, which are named after their inventor, T. F. Baily, president of the Electric Furnace Co. This plant occupies a 2-story building on a 9-acre tract along the main line of the Pennsylvania railroad at the Wilson street crossing which is within two or three blocks of the center of Salem. The factory has about 70,000 square feet of floor space, part of it under saw-tooth roof and all of it well lighted and roomy.

The building, which consists of several sections, is shaped like a carpenter's bevel rule, one leg being 297 feet long x 182 feet wide, with the other leg 197 x 54 feet. Part of the structure is two stories high, the offices and drafting room being located on the second floor. The drafting room is unusually large because, it is pointed out, the elaborate nature of the special automatic types of furnaces built by this company, necessitates the creation of a large number of detailed designs. Another part of the plant contains a testing laboratory for analyzing metals, testing refractories and generally performing the functions of a research department.

The whole scheme of manufacture in this plant is based on specialization. Each unit required in the completed furnace is built in a part of the factory planned for its particular production. These units are sent to a large central assembling room where the furnaces are put together, tested and prepared for shipment.

Although several sizes of furnaces are constructed, the standard of the Electric Furnace Co. is a 105-kilowatt tilting type, rated at 1500 pounds hearth capacity with a melting rate of 600 pounds per hour.

This furnace, when ready to ship consists of a steel shell 7 feet in diameter supported by cast-iron trunnions and lined with firebrick. It is equipped with the necessary geared mechanism for tilting and with a double-hinged, plug type door. The heating element within the furnace is connected by means of electrodes and cables with the auxiliary electrical equipment which is furnished with each furnace. This electrical equipment consists of an oil-break, selective switch, a low voltage transformer and indicating meters. When desired a contact making pyrometer is furnished by means of which the oil switch may be automatically tripped open when the furnace has reached any predetermined temperature. Although the details of some of the special types of Baily furnaces are interesting, it is the standard type which has made possible the segregation of departments and the quantity production methods which have reduced the construction of this furnace to a manufacturing basis. This article, therefore, will concern itself solely with the standard 105-kilowatt furnace. The transformer department constitutes a little industry by itself. It

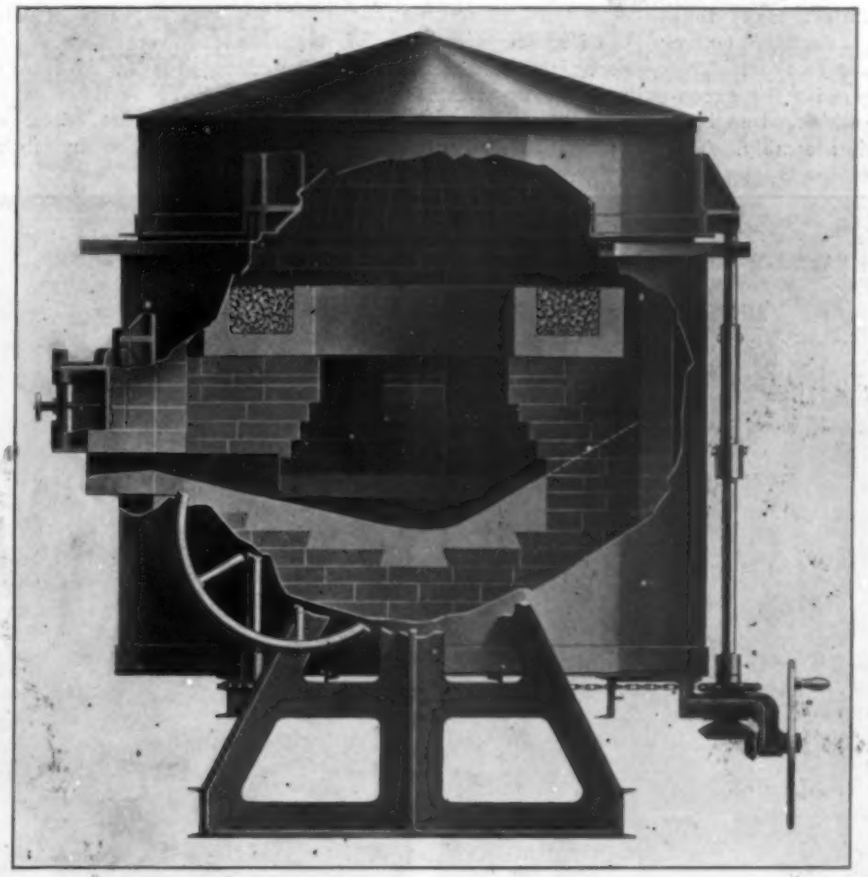


FIG. 1—ELECTRIC FURNACE WITH PORTION OF SHELL CUT AWAY SHOWING A SECTION THROUGH THE CARBON RESISTANCE RING AND CARBORUNDUM-SAND TROUGH

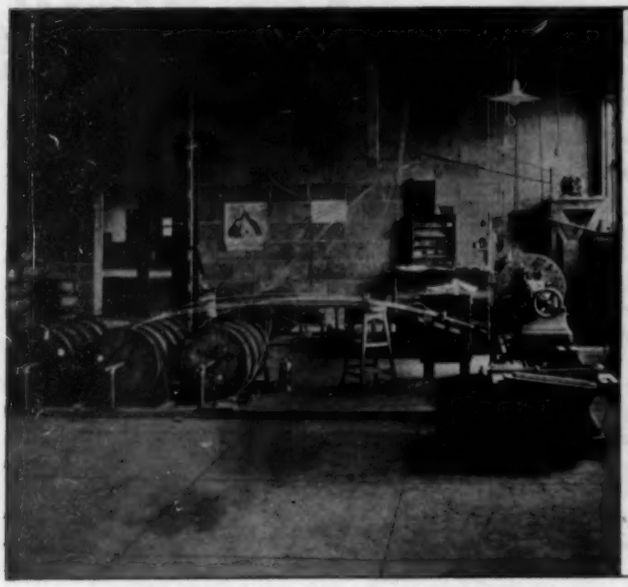


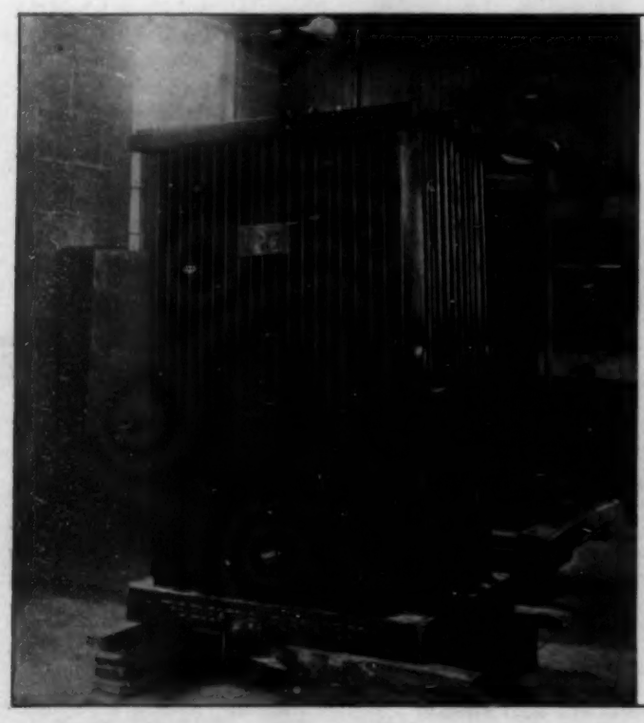
FIG. 2—LATHES ARE USED FOR WINDING THE TRANSFORMER COILS. FIG. 3— THE CORE LAMINATIONS ARE PLACED IN THE BASE CASTINGS AND ASSEMBLED TO RECEIVE THE COILS

is divided into three subordinate departments: One for the casing, one for the cores, and one for the coils. The casings are made of sheet steel which is corrugated and then shaped to form the walls of rectangular tanks. Where the sheets meet they are welded by the oxyacetylene process to produce permanently tight joints and the sleeves or bottomless tanks thus formed are sent to a foundry where the bases and tops are cast on. This completes the casings with the exception of the lids which are built integral with the coil assembly. The lids are large enough so that the openings in the tops of the casings will admit the coils. When the transformers are put into operation, these coils together with the cores and lids are lowered into place in the casing and oil is poured in until the coils are covered.

How Laminations Are Anchored

The cores are built of laminated sheet iron along standard practice lines but the laminations are held in place at top and bottom by heavy castings instead of by pressed steel forms. The principal reason for this construction is the fact that the conditions under which an electric furnace operates make sudden short circuits on the transformer a comparatively frequent occurrence.

This vigorous service also calls for modified coil construction. The coils are wound in sections on lathes from large reels of wire. These reels are conveniently arranged on pipe standards set in front of each lathe. The coil sections when wound are built onto the cores, where they are held in place by thoroughly dried wood



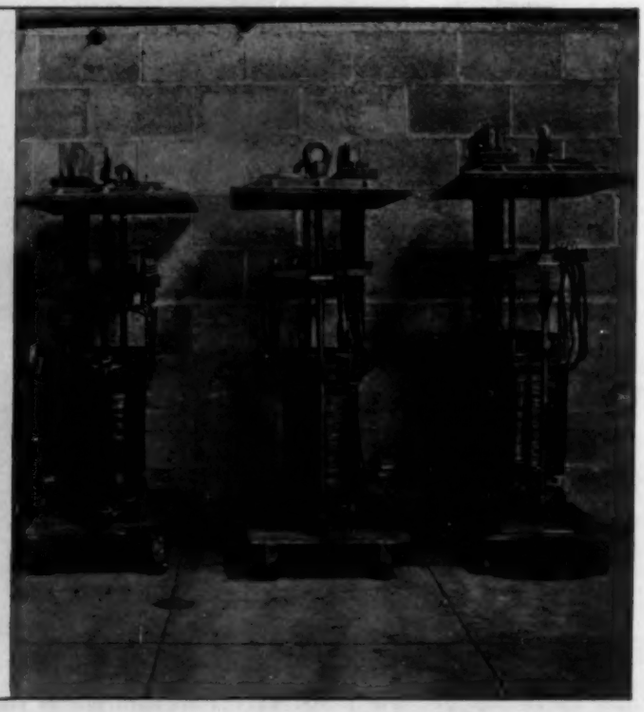


FIG. 4—THE CORRUGATED STEEL MAKES A STRONG, LIGHT TANK FOR THE TRANSFORMER COILS. FIG. 5—THE CORE, COILS AND LID ARE BUILT UP IN ONE ASSEMBLY AND LOWERED INTO THE TRANSFORMER CASING

blocks and are kept from warping by vertical wooden strips which run from the top to the bottom of each coil and are mortised in place at either end.

The transformers are provided with 10 special low voltage taps which permit 5-volt variations from 50 to 100 volts. The actual operation of changing the voltage is done by means of

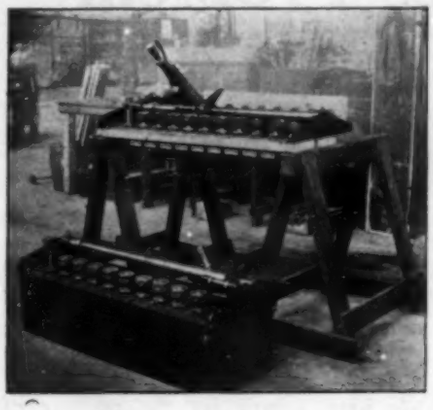


FIG. 6 — THE SELECTIVE OIL SWITCHES HAVE MANY PARTS AND REQUIRE CAREFUL WORKMANSHIP

the selective oil switch, which is an ingeniously designed mechanism.

The functions of this switch have been previously described. Its construction presents interesting features. It consists essentially of a horizontal busbar arranged parallel to a series of terminals any one of which may be brought into contact with the bus by means of a sliding yoke. By moving the switch handle from side to side, the yoke, which travels along a horizontal guide rod, may be locked in any position desired. The yoke itself is built in the form of a semi-eliptical spring, which insures positive contact at all points. By moving the handle up or down as with the usual oil switch, the yoke is raised or lowered a few inches and in this way it makes or opens bridging contact with switch points above it. These points are connected to the different voltage taps of the transformer and are spaced in a row parallel to the guide so that by moving the switch handle to the left the yoke comes under the lowest voltage points. Similarly the handle is moved to the right and lowered in order to make contact with the highest voltage switch point, and contacts with intermediate points are made between these extreme positions as desired.

The yoke and all the switch points are submerged in a tank of oil so that the circuit is always opened under oil. Before this switch was developed it was the custom to use one standard oil switch in series with a multicircuit air-break switch. The difficulty with that arrangement was the liability of opening the air-break switch when the oil switch was closed, thus causing a dangerous arc.

The new selective switches greatly simplify the changing of voltage and as this must be done many times during any one furnace operation, the switches assume considerable importance. When starting up a furnace with the carbon element cold and therefore of high resistance a relatively high voltage is required (usually 100 volts) but as soon as the carbon becomes hot the voltage must be lowered in order to keep the power consumption within the capacity limits of the transformer.

In an automatic furnace this power equalization is accomplished through several oil switches each connected to a different voltage tap and so arranged that the opening of one switch closes another which gives a corrective change in voltage.

The temperature change in the carbon element besides altering the resistance, affects many other details of the furnace. The trough containing the carbon expands and contracts and provision for this must be made in its design. This trough is made of carborundum sand which is prepared in what may be called the refractories department of the plant. This department occupies a large room on the ground floor and consists mainly of facilities for receiving and storing raw materials. Special shaped firebrick for the linings are kept on hand in large quantities, together with the tile used for protecting the entrance of the electrodes into the furnace. Carborundum sand, fire clay and other similar materials also are stored in the proper quantities.

The carborundum sand must be of an even and definite fineness and it is therefore put through a set of grinding rolls before it is ready for molding into the troughs which carry the granulated carbon resistances. The troughs are built into the furnaces in the assembly room after the brick linings have been completed.

The heating element of broken carbon particles, together with its supporting trough, forms the patented feature of the furnaces built by the Electric Furnace Co. It is of such importance that a somewhat detailed description of it may be warranted. The word trough gives the best idea of the housing for the heating element proper. But it is a trough in the form of a ring, built to encircle the inside of the furnace above the hearth. Its position with reference to the hearth and its cross section are shown clearly in Fig. 1. It has, for the standard 105-kilowatt furnace, an interior diameter of 30 inches and a wall thickness of 3 inches. Its opening or depression which contains the carbon is 9 inches wide and 7 inches high which determines the cross section of the heating element. The trough is made in segements to allow for expansion and contraction and is carried on four radial firebrick piers or brackets built out over the hearth. In the construction of the trough, wooden forms are used to bridge the spaces between the piers and to hold the green carborundum sand in place until it is baked, when it becomes firm and strong.

The sand in the wooden forms is molded to the proper shape to form the trough. The loose carbon particles are then poured in until the trough is filled, the upper surface being always open to the interior of the furnace. When the electrical connections have been made, the current is turned on and the heat thus created in the carbon element bakes the corborundum sand and burns away the wooden forms.

Considerable difficulty has often been experienced in making the connection from a copper electrode which must remain comparatively cool, to the carbon heating element of an electric furnace which must attain a high degree of temperature. With the loose carbon particles this problem has not been so hard to solve. At diametrically opposed points on the

FIG. 7—THE FURNACES ARE ASSEMBLED IN A LARGE ROOM AND TESTED BEFORE SHIPPING

ring, which forms the heating plant, openings are left in the outer trough walls and the carbon is allowed to flow out into the electrode entrance tiles which are located at these points. Heavy copper electrodes, 4 x 10 inches in cross section, are introduced into the tiles and thus become surrounded by the carbon particles which give the only electrical connection between the heating element and the source of

power delivered through the cables.

The current flowing in at one electrode splits to follow both sides of the carbon ring around to the opposite electrode from whence it flows back to the transformer.

In operation the whole mass of carbon particles in the circular trough glows almost at white heat and it is the radiation and reflection from them which acts as the melting agent.

As the furnace door fits practically air tight there is almost no loss of metal through volatilization during melting. It is not necessary to open the door during pouring; instead a small plug in the pouring groove may be removed and when the furnace is tilted a stream of molten metal flows out through this opening under the door into the ladle below.

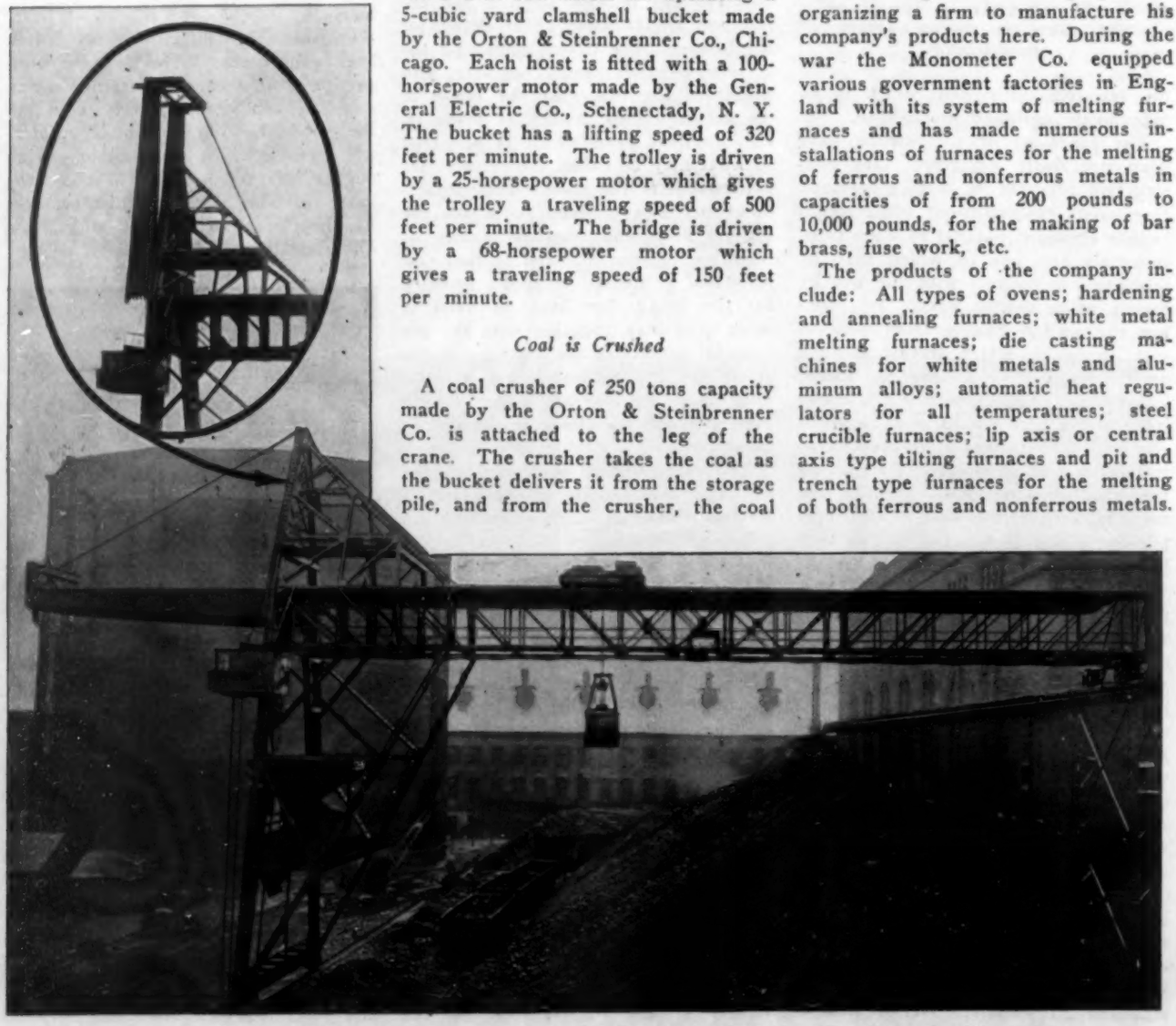
Movable Cantilever Solves Problem

A NOVEL method of overcoming a common industrial difficulty was adopted by the Whiting Foundry Equipment Co., Harvey, Ill., when it installed a gantry crane of unusual design for the Union Gas & Electric Co., Cincinnati. A crane was desired to serve a large fuel storage yard. The location of the large gas holder, shown in the illustration, made it impossible to cover the entire area with a standard gantry crane or with one having a fixed cantilever. To overcome the difficulty, it was decided to install a crane with a movable cantilever capable of being swung to a vertical position in order to clear the gas holder.

The crane has a span between the rails of 138 feet 9 inches and an effective cantilever of 35 feet. The cantilever is raised or lowered by means of a lifting mechanism located on the inside of the leg above the crane girders. The overall height of the leg is 97 feet 3 inches. The trolley is fitted with two hoists for operating a 5-cubic yard clamshell bucket made by the Orton & Steinbrenner Co., Chicago. Each hoist is fitted with a 100-horsepower motor made by the General Electric Co., Schenectady, N. Y. The bucket has a lifting speed of 320 feet per minute. The trolley is driven by a 25-horsepower motor which gives the trolley a traveling speed of 500 feet per minute. The bridge is driven by a 68-horsepower motor which gives a traveling speed of 150 feet per minute.

Coal is Crushed

A coal crusher of 250 tons capacity made by the Orton & Steinbrenner Co. is attached to the leg of the crane. The crusher takes the coal as the bucket delivers it from the storage pile, and from the crusher, the coal is conveyed by a chute into dump cars which take it to the power house. The capacity of this coal-handling equipment is 250 tons per hour.



THE CANTILEVER AT THE LEFT IS LIFTED TO THE VERTICAL POSITION WHEN THE GANTRY PASSES THE GAS HOLDER

English Firm to Organize Subsidiary Here

I. H. Hall, managing director of the Monometer Mfg. Co., Whitehouse street, Birmingham, Eng., expects to visit this country as soon as peace has been signed for the purpose of organizing a firm to manufacture his company's products here. During the war the Monometer Co. equipped various government factories in England with its system of melting furnaces and has made numerous installations of furnaces for the melting of ferrous and nonferrous metals in capacities of from 200 pounds to 10,000 pounds, for the making of bar brass, fuse work, etc.

The products of the company include: All types of ovens; hardening and annealing furnaces; white metal melting furnaces; die casting machines for white metals and aluminum alloys; automatic heat regulators for all temperatures; steel crucible furnaces; lip axis or central axis type tilting furnaces and pit and trench type furnaces for the melting of both ferrous and nonferrous metals.

Standardizes Steel Ship Materials

Uniformity is Sought to Eliminate Confusion and Delay to Steel Mills, Previously Engaged in Rolling Structural Shapes, in Adapting Their Methods to Rolling Ship Steel—Number of Sections Reduced

BY FRED T. LLEWELLYN

WHILE the possibilities of standardizing the various types of ships might be limited by differing conditions of routes, harbors, and service, yet standard ranges and grades of material can be applied to any ordinary types and designs. This feature is of special concern to the members of the American Iron and Steel institute, particularly as regards hull steel.

A ship can be considered as a storm-tossed box-girder, a freight tank, a power house, and a floating hotel, all combined. The popular notion that her stresses are indeterminate is no more correct than in the case of fixed steel structures. The origin of design in both classes of structures was an accumulation of empirical rules, and in both cases theory has simply afforded an intelligent means of comparing the probable safety of an untried design with one whose behavior is known. The TITANIC is matched by the Tay and the Quebec bridges.

The ship designer is fortunate in being able to utilize the upward reaction of buoyancy at each cross section of the ship in reducing the stresses caused by his dead and live loads, the maximum longitudinal bending moment amidships being roughly only one-fourth of the moment that would result from a uniformly distributed load equal to the weight of ship and contents on a clear span equal to the length of the ship, but this proportion does not hold at other points fore and aft.

Recommended Rules

The classification societies, realizing that dangerous errors, due to inexperience, oversight, or, in rare cases, unscrupulousness, might accompany the preparation of stress diagrams for each design, have saved the purchaser and the shipbuilder the time and labor that such calculations would require by publishing tabulated rules giving the scantlings recommended for the various hull members in ships of the more usual types and dimensions. These rules are revised from time to time in line with experience based on the constant survey of both the construction and operation of ships. It is to be regretted, however, that the eight principal classification societies have not as yet agreed among themselves on a standard set of rules.

The possibilities for standardizing ship as compared with bridge material are limited by several considerations. With a given fuel consumption, the earning capacity of ships of similar construction and equipment varies with the ratio between the weight of water displaced by the loaded ship and that of the ship when empty. Consequently any excess weight, added with a view of standardizing material, not only may increase the first cost, which is not the most important factor, but will certainly decrease her earning capacity during the entire life of the ship. The essential requirement of water and oil-tightness also affects the determination of suitable material.

Standard structural channels less than 15 inches in depth are unsuitable for shipbuilding, for their flanges are too narrow to receive the proper sized rivet hole, and their inner faces too steep to allow of a symmetrical rivet head, and the proximity of the rivet head to the fillet of the channel makes efficient laying-up very difficult. For this reason ship channels, having wide flanges with almost flat inner faces, are preferable for medium sized ship members, and bulb angles for the smaller ones. A bulb angle is stronger than a plain angle of equal weight; it can be readily manipulated on the bending slabs; and the mass of metal forming its bulb is a protection against the wear and tear of such cargoes as coal, ore, or steel. The bulb offers only a small surface to corrosion, and unlike the flange it is never in the way of riveting.

Demand For Tees is Small

While recognizing the advantage of tees in facilitating the making of water and oil-tight connections, notably at the bulkheads of Isherwood tankers, as well as in the construction of bilge keels, the total demand for these sections as compared with the variety of contours offered by the few mills rolling them is insufficient to warrant their general use. Similar objections apply to the occasional specification of Z sections. The popularity of H sections for use as pillars has been limited to a comparatively small number of yards.

A semimedieval custom, whose effect is not always realized, has tended to befog the steel engineer in his efforts to clarify the application to ships of his experience in other structural lines, namely the terminology employed. This is due not so much to the use by shipbuilders of special terms, but rather to the employment by both ship and bridge builder of common terms but with different meaning, and of different terms with the same meaning. Thus, the deadweight of a ship is the live load on a bridge. The structural engineer would call the floors of a ship floor girders, while *his* floors are known in a shipyard as decks. The webframes of a ship correspond to bridge portals, her cantframes to skewportals, and her bulkheads to diaphragms. The foundations beneath a ship's machinery would be known on land rather as grillage, while a marine erection is confined to superstructures. The shipbuilder usually restricts the terms gusset plate and stringer to horizontal members, preferring the respective terms bracket and girder if they are vertical, and plain

Boosting Production

THAT any manufacturing concern, whether building transatlantic liners of mousetraps, can profit through the use of standardized materials is a lesson graphically taught by the war. With sufficient steel to build the ships, confusion resulted from the numerous different steel standards. This played havoc with delivery dates and resulted in the socalled "lag list" composed of ships still on the ways that should have been delivered.

The standards for ship materials adopted by the Emergency Fleet corporation were modeled after British standards. This was not because the English standards were in any way superior but was due to the fact that England as an established shipbuilding nation had had ample time to standardize materials. Striking reductions in the number of variety of sizes of ship sections have boosted production both in the shipyards and steel mills.

Abstracted from a paper presented at the recent New York meeting of the American Iron and Steel institute. The author is an associate member of the Society of Naval Architects and Marine Engineers and had charge of steel standardization for the Emergency Fleet corporation.

rolled steel angles are not classed as shapes in the older shipyards, whereas rolled steel bars are frequently so included. The shell of a ship might be termed skin by a structural engineer, who would furnish or attach members that in ship parlance are fitted, and he would put a crimp in plates or frames that on the ways are knuckled. In spite of these unknown tongues, it will be evident that the material used is the distinguishing factor in the differing conditions of design.

How Delay Was Caused

The factors responsible for the so-called lag lists during the war were the great variety of the different sizes of material specified. These were the odds and ends that threatened to render unavailing the strenuous efforts of the rolling mills to ship in sequence, and that encouraged an otherwise unnecessary cushion of reserve stock at one time aggregating over a million tons. These were the conditions that made it possible for one of our large shipyards to have received some 30,000 tons of steel without having on hand enough of the proper sizes to allow them to proceed with the construction of a single ship.

Although the opportunity to standardize the steel shapes used in shipbuilding in the United States did not fully materialize until after the British had compiled standards yet we were more efficient as regards plates. In July, 1917, representatives of our steel plate mills met in Washington and adopted an outline of recommended standard practice sponsored by R. B. Woodworth, engineer with the Carnegie Steel Co., and this was subsequently adopted by the Emergency Fleet corporation as a guide to the shipbuilders in placing orders with the mills for ship steel. This recommended standard practice received wide publicity in the pamphlet entitled *Structural Steel for Ships.* Its salient features follow:

Plates to be ordered to fractional thickness in multiples of $\frac{1}{8}$ inch, or to a table of weights corresponding approximately thereto, multiples of $\frac{1}{4}$ inch being allowed in special cases.

Sketch plates to be sheared at the shipyards.

Universal mill plates to be used wherever possible.

Multiple lengths and widths to be allowed as far as practicable.

Extreme sizes to be avoided.

Specification of definite and uniform grades of steel.

Elimination of location marks on material as shipped from the mills.

The first edition of the above mentioned pamphlet also limited the list of plain angles recommended, and urged that orders for other shapes be confined to American standard I-beam and structural channel sections, although it allowed the use of ship channels and bulb angles in special cases.

Standardized designs, however, failed to reduce the variety of sizes, especially in the so-called fabricated ships. Also, many yards continued to specify ship channels in such quantity that several steelmakers, who had not previously rolled them, were arranging to produce these shapes as well as bulb angles.

In August, 1918, a standardization survey was undertaken by the writer, who had been placed in charge of the standardization of ship steel under H. C. Sadler, naval architect, by Daniel H. Cox, manager of the division of steel ship construction, Emergency Fleet corporation. The starting point was the compilation and analysis of 84 classified summaries showing the quantity of each thickness of every section used in each of the 44 designs to which the 1508 ships canvassed were being built. As these ships had a total deadweight capacity of 10,302,150 tons, and involved 1,100,651 tons of steel shapes, their analyses might be considered representative. Most of the summaries were furnished by the 60 shipyards reporting, supplemented by compilations and weight extensions made from steel schedules and designs on hand at the home office of the Emergency Fleet corporation. Sets of 52 large charts were prepared from these summaries, showing graphically the relative popularity of each section, and these were of value, not only as a basis for the recapitulations included in the formal report, but also, as the work progressed, to indicate the probable sections to be recommended, for simultaneously with the preparation of the data informal conferences were held with representatives of most of the rolling mills and of many fabricating shops and shipyards, who were thereby enabled to save time when later called upon for definite action.

Needs Are Outlined

On Oct. 15, 1918, a report was submitted to the officials of the Emergency Fleet corporation, in which the outlined need of further standardization was supported by tabulated statistics, and a selected list of sections proposed, together with the recommendation that copies of the report be placed in the hands of all the interested steelmakers and shipbuilders with a request for constructive comment and criticism. Certain other detailed revision of the previously recommended standard practice was suggested with the view of making more uniform and efficient the methods of ordering ship steel, and it was finally recommended that the findings of this conference, upon approval, be made effective by the issuance of a formal order to the shipyards by the Emergency Fleet corporation. No steelmaker was asked to scrap any rolls or to prepare any new ones, as it was recognized that this was his own affair, but it was urged that a common standard be agreed upon with which such sections as each maker produced or contemplated should comply.

Conference Brings Results

Conformably with the invitation extended in accordance with this report, conferences were held at the offices of the Midvale Steel Corp., Philadelphia, on Nov. 19 and 20, 1918, which were attended by representatives of all the larger mills rolling structural steel shapes, namely, Bethlehem Steel Co., Cambria Steel Co., Carnegie Steel Co., Eastern Steel Co., Illinois Steel Co., Inland Steel Co., Jones & Laughlin Steel Co., Lackawanna Steel Co., Phoenix Iron Co. and the Tennessee Coal, Iron & Railroad Co. The vice chairman of the subcommittee on steel distribution of the American Iron and Steel institute was also represented, together with the chief designer of the Emergency Fleet corporation, and the writer. Communications had meanwhile been received from the other shape mills, as well as from a large number of the shipyards, advising their approval of the movement and submitting in detail many valuable suggestions.

The first day was occupied by the steelmakers in technical discussion of the modifications necessary to standardize their shape rolls, and of the proposed selected list of sections. In order to secure uniformity of action it was agreed that the detailed properties of the new standard sections should be calculated by the Carnegie Steel Co. and checked by the Cambria Steel Co. On the second day the findings of this conference, as regards the recommended standard practice, were submitted to the representatives of the Emergency Fleet corporation, who, with a few minor modifications acceptable to the steelmakers, approved them. The result was the subsequent issuance by the Emergency Fleet corporation of a second edition of the pamphlet: *Structural Steel for Ships,* in which the revised recommended standard practice was adopted. The variety of different shapes was reduced from 131 to 27, and of different thicknesses of sections from 403 to 115, and that the adopted sections of ship channels and bulb angles were based on the British standard sections.

In view of the fact that some criticism has been expressed at the selection of British standards, a word of explanation seems to be in place. Prior to the action just narrated, the United States had no standards for the shapes in question—the shipbuilding demand had not warranted it. Instead there was a heterogeneous growth of sections whose profiles and weights differed with

each mill, for which in many cases rolls had been turned up in periods of business depression to meet the desires of the various shipyards for something a little lighter than competitors were using. These sections were often too slender for economical manufacture, and offered no basis for standardization.

In the British Isles, however, where steel shipbuilding had its cradle, and, until recently, its greatest development, the demand for suitable and uniform sections had made necessary the adoption of a series of standards. To this end, in 1904, an engineering standards committee was appointed under the auspices of the British Institutions of Civil, Mechanical and Electrical Engineers, and of Naval Architects, as well as of the British Iron and Steel institute, and this committee, after the most careful investigation, recommended for use in all these fields of engineering construction a series of standard sections that were acceptable to both makers and users, including the shipbuilding industry. These were called the British standard sections.

British Practice Differs

It is important to remember that the practice of the British rolling mills differs from ours in that they roll to any thickness desired, usually by nominal steps of even hundredths of an inch, whereas we find it more profitable for the maker, and ultimately more serviceable to the user, to adopt a series of specific weights per lineal foot intermediate between the maximum and minimum. Conforming to foreign custom the tables of British standard sections publish only one standard thickness for each of the sizes of shapes in question, namely, the thickness at which the web and flange of the section are exactly the nominal dimensions of the shape, with an explanation that for other thicknesses these dimensions will vary with the desired squeezing or spreading of the rolls.

It is a little early to speak of the full results of these steps toward standardization. Their primary purpose was to help win the war by assisting in the speeding up of the production, fabrication, and assembly of ship steel. And then came the unexpected armistice, which made less imperative the military features that had been aimed at. Moreover all the details had been handled with an eye to future conditions of peace. It is gratifying, however, to note that early in 1918 the industry was already benefitting from the degree of standardization then accomplished. As a result of the uniformity of specications received, one of our newer plate mills, with a normal capacity of 12,500 tons per month, was enabled to increase its product to 16,000, 17,240, 18,025, 19,145, and even 20,973 tons per month.

As regards shapes, the shipbuilders are substituting the standard sections now recommended as rapidly as the progress of their work will permit, and it has been possible by the elimination of odd sizes to design a 9400-ton ship with only 16 different shapes and 44 thicknesses of section, as opposed to the former averages of 28 shapes and 73 thicknesses per ship, and this was evidently accomplished without increase in weight of steel, for the builder asked no increase over the agreed price for the ships. In general it has been found that yards using the least variety of different sections show the greatest efficiency in the delivery of ships, while the performance of yards using a great variety is the least satisfactory in proportion to their total tonnage.

All of the efforts toward standardization were made from the broad standpoint of benefit to the whole country. Encouragement and co-operation were extended by the government agencies, and by former competitors and associates alike, from the chairman of the committee on steel distribution of the American Iron and Steel institute, and the high officials of many of the large shipbuilding companies, to the draftsmen in the yards and the order clerks at the mills. It is hoped and believed that the steps taken will continue to assist the entire industry as long as the recommendations are consistently carried out, or until they are superseded by something better.

Mining Engineers Plan Chicago Meeting

Plans are well under way for the meeting of the American Institute of Mining and Metallurgical Engineers at Chicago during the week of Sept. 22. The morning of Monday, Sept. 22, will be devoted to registration at convention headquarters in the Congress hotel, and in afternoon the first session for presentation and discussion of technical papers will be held. In the evening a smoker will promote acquaintance.

Tuesday will be devoted to an excursion by steamer to Gary, Ind.,

Engines Assembled in Suspended Cradles

THE latest and most scientific ideas in factory equipment are being applied in the installation of new machinery at the plant of the Hudson Motor Car Co., Detroit, which is preparing for the production of the new Essex automobile. Over 90,000 square feet of floor space are devoted to the construction and assembly of this car and approximately $600,000 has been invested in new equipment. The large building erected during the war for shell manufacture has been converted into a machine shop, engine assembly and test department while the chassis assembly lines occupy a wing in the main factory. In the illustration is shown the engine assembly with each engine seated in a cradle to permit rapid movement after assembly.

THE CRADLES SUPPORTING THE ENGINES ARE SUSPENDED FROM THE TRACK OVERHEAD

for a trip through the Illinois Steel Co.'s plant. Wednesday two technical sessions will convene and in the evening the banquet will be held at the Congress hotel.

Thursday a special train will carry delegates to La Salle and Depue, Ill., to visit the zinc smelters, coal mines and cement works. A number of optional excursions have been arranged for Friday, including trips to the lead refineries at East Chicago and the Standard Oil Co. refinery at Whiting, Ind.; and to Milwaukee for visits to the plants of the Allis-Chalmers Mfg. Co., and the Power & Mining Machinery Co. Arrangements also have been made to visit the Fansteel Products Co., North Chicago, where metallic tungsten, molybdenum, cerium and tantalum are being produced by an electro-thermal process. An excursion will leave Chicago late Friday evening for the coal fields in Franklin and McCoupin counties, where Saturday will be spent.

Massive Forming Press

What is probably one of the largest forming presses ever built is shown in the accompanying illustration. The comparative size of this machine is readily comprehended from the automobile which has been driven on the platen. This press is used for blanking and forming exceptionally heavy units among which are Pullman car berths, freight car ends, frames for automobile trucks, etc. The tool is a product of the E. W. Bliss Co., Brooklyn, N. Y.

The base of the machine is box section to which are bolted the housings, while a separate casting carries the double crank that actuates the ram. The crankshaft is driven at each end through the medium of heavy spur gears. In turn, these gears are driven by a jackshaft. Adjustment of the ram is by means of screws operated by a system of gears.

This press exerts a pressure of 1200 tons. Some of its principal dimensions are: Opening in bed, 36 x 120 inches; width between housings, 150 inches; maximum stroke of ram, 24 inches; thickness of bolster, 13 inches; ratio of gearing, 75 to 1; height from floor to center of shaft, 164 inches; overall height, 236 inches; diameter of crankshaft, 15 inches; floor space occupied, 148 x 265 inches.

Die Head Has New Feature

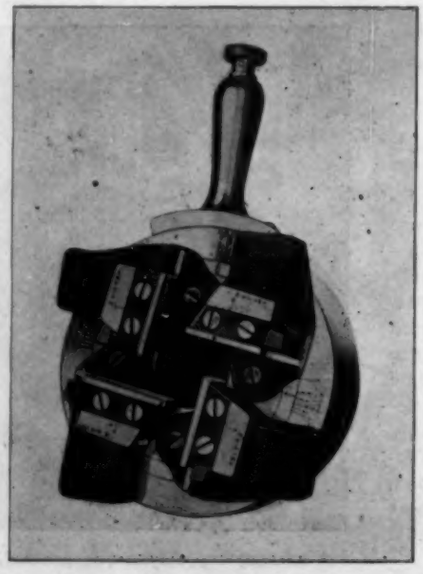
Differing in design from most other heads of its character, the steel die head illustrated herewith has chasers which are supported on the face of the

DOUBLE-CRANK, 1200-TON FORMING PRESS

head. This makes the chasers easily accessible for grinding or for changing from one diameter to another. While it is closed by hand, it is opened automatically by retarding the forward motion of the carriage and is locked by the operating handle which contains a latch which has a tongue milled on its lower end. This tongue is milled off center, which permits of roughing and finishing cuts and to adjust the head for either of these operations a half turn of the latch to suitable graduations is all that is required. It is being produced by the Landis Machine Co., Waynesboro, Pa., and employs that company's chaser or threading tool.

The head is graduated for all sizes of bolts and pipe, both right and left hand within its entire range. An adjusting screw which engages the head body, adjusts it to size. Since the operating, adjusting and closing rings remain fixed when the head is closed, rotating the head body within these rings gives the diameters within the range of the head. For left-hand threading, the screw locking the latch pin is removed and the latch pin rotated to the left-hand graduation. Left-hand holders are attached after the locking screw is replaced.

Applicable to practically all makes of screw machines and turret lathes with capacity for it, the head can be furnished with special shanks, not larger than the standard shank described. When special shanks of greater dimensions than the standard are required, it is necessary to use a bushing to insure proper application of the head to the machine.



DIE HEAD WITH CHASERS SUPPORTED ON THE FACE OF THE HEAD

Inclusions in Steel

At the annual meeting of the American Iron and Steel institute in New York, May 23, a paper discussing nonmetallic impurities in steel was read by Henry D. Hibbard, consulting engineer, Plainfield, N. J.

Special attention is paid to those nonmetallic impurities which are insoluble in molten steel and which are often called oxidation products, enclosures or inclusions but which the author terms sonims.

Such impurities when found in steel are divided into five classes:

1.—The products from the reactions of the manganese and other additions with the sulphides and oxides of the unfinished steel.

2.—The products from the oxidation of some of the finished steel ingredients by atmospheric oxygen during the progress of the steel from the furnace to solidification in the molds.

3.—Oxides from the unfinished steel.

4.—Slag particles entrained particularly from the intimate mixing which results from pouring the charge into the ladle.

5.—Particles of dirt and other nonmetallic matter such as bricks and clay with which the metal comes in contact during its passage from the furnace to the molds and which are too small for gravitation to send to the top.

The occurrence and cause of sonims in bessemer, open-hearth and electric furnace steel are considered and remedies are suggested. The effect of holding the steel in the ladle before pouring was found to be beneficial.

In dealing with the effect of sonims on steel it is pointed out that the way in which such substances are distributed within the metal is even more important than their quantity. If collected in globules they are most injurious. Their tendency is to make the steel red short, especially in the unfinished state.

Syndicate Rules French Iron Trade

Le Comite des Forges, One of World's Most Remarkable Business Combinations, Controls 97 Per Cent of Country's Iron Production and 93 Per Cent of Steel—War Record Attacked and Defended

BY FRANCIS MILTOUN

Paris Correspondent of The Iron Trade Review

THE Comité des Forges de France has been much in view during the war, especially so during the interpellations on the Briey affair in the French chamber of deputies since the armistice. Without bringing the Briey mystery, for it is still that, into the discussion, a resume of the organization and the functions of this perhaps greatest of all trade syndicates is pertinent.

Combination has been the order of the day in the French steel and iron industry. From 383 individual plants in 1873 the number fell to 208 in 1912 while their production had more than quintupled, from 900,000 tons to 4,900,000 tons annually. The average production of the individual plants advanced from 2350 tons to 21,700 tons in the same time.

Physical and economic conditions tended to group the industries in certain regions. Regrouping was a slow process requiring more than a quarter of a century before the industry got well defined and localized. In 1875 *fonte* or pig iron was produced in 57 departments of France. Just before the war 80 per cent of the output of cast iron and 75 per cent of the steel was produced in the two departments of Meurthe et Moselle and the Nord. The small isolated plant was succeeded by the centralized, more powerful, more efficient and more easily controlled group. No one at that time thought of the danger of invasion to this industry, so close to the frontier. This was a big error of judgment, whoever was responsible for it.

One of the principle tenets of French metallurgy was that the big factory should, as far as possible, be its own *fournisseur*, which is another way of saying that the steel works should have its own coal and iron mines, its foundries and its freight cars. All in miniature, of course, as compared with American standards, but still on a notably important basis, the famous Comité des Forges practically controls the whole industry through its members, and that is something of importance in the economic life of a country.

The Comité des Forges dates from 1864. In 1884, adapting itself to the regime of a new law, it became a professional syndicate of forge masters. Its object, according to its published statement was: "The study and defense of economic, industrial and commercial interests relating to iron and steel, and this to the entire exclusion of any specific act of commerce itself."

In 1914 the committee counted 252 adherents, representing 97 per cent of the French production of *fonte* and 93

DISTINGUISHED GROUP OF FRENCH IRON MASTERS AMONG THE LEADING OFFICERS AND MEMBERS OF LE COMITE' DES FORGES DE FRANCE. SEATED, FROM LEFT TO RIGHT, ARE L. MERCIER, FRANCOIS DE WENDEL, ACTIVE PRESIDENT OF THE COMMITTEE; M. DARCY, AND EUGENE SCHNEIDER, HONORARY PRESIDENT

per cent of that of steel. The probable capital invested was not far from $250,000,000 and the number of workmen employed was about 200,000, who, in 1912, earned $80,000,000 in wages.

Among the members are found representatives of all the big firms in the industry of which the 14 following furnish 60 per cent of the *fonte* and 66 per cent of the steel produced in France: Acièries de la Marine, Denain and Anzin, de Wendel et Cie., Longwy, Micheville, Chatillon et Commentry, Senelle-Maubeuge, Schneider et Cie., La Providence, Basse Loire, Forges et Acièries de France, Commentry - Fourchambault - Decazèville, Forges et Acièries du Nord et Ouest and Pompey. Around these great groups are found others of lesser importance down to the small founder employing a dozen workers.

Officers and Members of Committee

In 1914 the Comité des Forges de France was directed by Monsieur Guillain, since deceased, and 23 associates. Today the number stands at 28, thus composed: Honorary president, Eugene Schneider; president François de Wendel; vice presidents, A. Dreux, of the Longwy company, M. Pralon, Denain et Anzin, Leon Levy, Rouen, and M. Laurent, Marine et Homecourt; treasurer, Baron Xavier Reille, Alais; members, Aynard, Saint Etienne; Bethmont, Dives; C. Boutmy, Margut Ardennes; Capt. Geny, Bussy, Haute Marne; Cavallier, Pont a Mousson; G. Caudinon, Chambon-Feugerolles; de Courville, Société Normande; Darcy, Chatillon-Commentry; Dujardin, Beaumetz, Montbard; Dumuis, Firminy; E. Ferry, Micheville; Fayol, Commentry-Fourcham; Fould, Pompey; Fournier, Schneider; Heurteau, Allevard; Lesaffre, Ferriere la Grande; L. Mercier, Acièries de France; Baron de Nervo, Saut du Tarn; Petin, Ouest; Comte de Saintignon, Meurthe et Moselle; secretary general, Robert Pinot; honorary member, M. de Freycinet, honorary director, des Etablissements Schneider.

M. de Wendel, the actual president, is a member of the French chamber of deputies from the department of Meurthe et Moselle. His is one of the most ancient families of France in the iron and steel industry. He has a brother, who living on the German side of the frontier of Lorraine, which ran through the family mines at Joeuf, was also a deputy in the reichstag. From the beginning of the war this German member of the family has been in France and no doubt has ever been cast upon his patriotism. The family of de Wendel, as a result of the treaty of Frankfort, saw its properties divided, one portion remaining French, the other becoming German. The Wendel interests in German possession were taxed by the fiscal authorities $105,000,000 as their share of the war budget. As the one time German de Wendel had fled to France and as the levy was made by force this hardly affected the family or its patriotic status in spite of the fact that a lot of unfair statements have been made against its business relations.

During the past 20 years the Comité des Forges has fathered a number of minor syndicates representing well-known iron and steel specialties, railway material, rails and rolling stock, ships and engines, mines, structural steel and electrometallurgical industries. Finally, the Comité des Forges and the other syndicates all go to make up the Union des Industries Metallurguiques et Minieres. These producing syndicates are, in turn, allied with a commercial, selling organization in a more or less intimate manner, as for instance the Comptoir des Poutrelles, which counts among its members seven of the parent committee.

It is probable that the working organization in France, again citing the Comptoir des Poutrelles, which had the entire marketing of *fers marchands* produced by its members, suceeding in keeping the augmentation of price down to 33 per cent, whereas the nonaffiliated concerns saw their products increased 68 per cent. In Germany, the land par excellence of combinations before the war, prices only increased 22 per cent. Generally, coal costs were a prime factor. In Germany, between 1895 and 1904, coal increased 20 per cent, in France 134 per cent, in Belgium 147 per cent and in England 143 per cent.

The selling agencies, dependents of the Comité des Forges, function in a manner far different from what is the practice in America. The French *comptoir*, following the happy formula conceived by Monsieur Tribot-Laspiere, is simply a "sales association" which relieves the actual producer of the necessity of looking for a market and the expenses attendant upon securing that market. Each *comptoir* has its specialty; the Comptoir de Longwy treats only of raw castings, the Comptoir des Poutrelles current semimanufactured shapes of certain standard dimensions. The operations of each are limited geographically. Each *comptoir*, or association, gives a pro-rata share of its orders to the various producing members or passes to the producing center such orders as may be sent to it or may have been procured by it, accordingly as it judges one or another member the best fitted for production of the article in question. The customer is thus relieved of middlemen, and the manufacturer likewise. These advantages supposedly compensate both sides for any otherwise seeming disadvantage there may be in having to deal with so powerful an organization.

During the war the Comité des Forges has not appeared to have over-reached its lawful limitations and has not sought even to deal direct with the ministry of armament. On the other hand, one of its most important *comptoirs*, that of L'exportation des Produits Metallurgiques, finding its foreign business blocked, was called by the government to act as adviser as to the country's resources in iron and steel and their manufactures, and rendered valuable services. There has been a wealth of argument and criticism recently as to the part the committee played in the war but without more definite facts than have yet been made public there seems no reason to continue the argument here.

French Production of Iron and Steel

To the reproach of having limited before the war the production of iron and steel in France in order to hold up prices, the Comité des Forges replies by figures recently published in one of its bulletins. From 2,700,000 tons in 1900, the production of French *fonte* increased to 4,000,000 tons in 1910 and to 5,300,000 tons in 1913. The production of steel

Denies Crippling French Industry for War

ARE industrial combinations beneficial or harmful to great nations? While the tendency in Great Britain as a result of the war is to emphasize the advantages resulting from closer association among business interests, in France one of the greatest trade combinations in the world has received serious criticism in the chamber of deputies. The French public has been treated to an after-the-war "scandal" as a result of charges made by certain French deputies that the Le Comité des Forges deliberately curtailed production in the years before the war so that it might keep prices up. The committee has been charged with responsibility for crippling the nation's iron and steel industry and thus, indirectly, for intensifying the disaster to France. In reply, the champions of the committee point to the increase in the production of pig iron in France from 2,700,000 tons in 1900 to 5,300,000 tons in 1913 and the increase in the production of steel from 1,500,000 tons in 1900 to 4,600,000 tons in 1913, respective increases of 87 and 152 per cent, while the respective increases in German production were 92 and 118 per cent. The debates in the chamber have served to focus attention on the operations of the Comité, and THE IRON TRADE REVIEW'S *Paris correspondent here describes the organization, "the controlling force of the French iron and steel trade."*

progressed in an analogous manner, from 1,500,000 tons in 1900 to 3,400,000 in 1910 and 4,600,000 in 1913. The production of *fonte* during this period increased 87 per cent in France, and steel increased 152 per cent, while in Germany the respective increases were but 92 and 118 per cent.

The above figures should prove at least that French iron masters did not seek to limit production. Just what the industry may be in the future is not easy to prognosticate. The Comité des Forges is planning some wonderful projects, and with the welcoming back to the fold of the entire Lorraine iron fields and their close-coupled furnaces and foundries it is more than probable that the industry of France as a whole, so far as it is dependent upon iron and steel, is to know a more prosperous future than it has ever experienced before.

Hook Built Up From Scrap Ship Plates

A novel means of utilizing scrap ship plates in shipyards has been made possible through use of the oxygen blowpipe for cutting metal. At one shipyard, recently, scrap ship plates were cut into special shapes for building up large hooks for handling the heavy ladles in a nearby steel mill. One of the partially completed hooks is shown in the accompanying illustration. These hooks are 8 feet in total length and are made up of six layers of plates the full length of the hook and four shorter layers about half the length of the hook. Countersunk rivets are used to hold the plates together. The four inner plates are of ½-inch material and the two outer full-length plates are of ⅞-inch material. Adjoining the latter plates on either side are half-length plates of ½-inch material still further reinforced by two slightly shorter plates of ⅞-inch material, one on either side. The plates are first marked with a templet to serve as a guide for the oxygen cutting blowpipe. After cutting, they are assembled and riveted together as shown in the illustration. A laminated construction of this kind, it is claimed, is not only exceptionally strong, but is a decided economy since it makes use of what would otherwise be waste material.

Concentrating Plant Aids Oil Production

Numerous improvements in mining practice recently have been made at the properties of Witherbee, Sherman & Co., Mineville, N. Y. They have made it possible still further to increase the output of ore, which in 1917 doubled the output of 1916, and which during 1918 was at the same rate as during 1917. Owing to the shortage of labor in 1918, the company found it necessary to employ electric shovels for loading ore into tram cars. With the aid of these shovels, three men now do the work of five muckers. At the present time five small shovels of the Thew type, having 9½-foot booms and 1-ton buckets, are engaged in this work. A shovel of the type made by the Myers & Whalen Co., Knoxville, Tenn., also has been installed.

The practice of milling ore also has been greatly improved, and with the aid of equipment which has been installed for retreated tailings, the latter now contain, on an average, only 5 to 6 per cent iron. After each crushing, ore containing more than 60 per cent iron, is removed automatically, for transfer to stock bins, while tailings containing less than 5 per cent of iron are rejected by the use of a magnet of lower tension. The ore first is crushed to a size which will pass through a 2-inch mesh screen. The 2-inch material, which remains after the 60 and higher per cent ore is withdrawn, and after the tailings containing less than 5 per cent ore are rejected, contains an average of 30 to 40 per cent iron, the variation depending upon the grade of ore that is being worked. The ore then is recrushed to a smaller size and the same process gone through again. In fact, the operation of withdrawing ore containing 60 per cent or more of iron, and of rejecting tailings containing less than 5 per cent, is repeated a number of times. When the ore has been crushed to a size which will permit it to pass through a ¼-inch mesh screen, the recrushing and separating is continued into much finer sizes, but from this point on all tailings are thrown out which contain less than 6 per cent iron. Therefore, the average metallic content of the tailings ranges from 5 to 6 per cent. The average content of the concentrates is 64 and 65 per cent iron oxide, and this content may be increased or lowered by varying the intensity of the magnets employed in separating. At the present time, the purest material which is being turned out contains 71 per cent iron, this being produced for special use.

After extensive experimenting, Witherbee, Sherman & Co have developed a by-product which for the past year has been manufactured successfully from the tailings from the Old Bed ore. The crude Old Bed ore has an average phosphorus content of 1.6 per cent, and the tailings from this ore run 3 per cent on the average. During the many years since the Old Bed originally was worked, there accumulated an enormous tailings pile, and investigations were undertaken with a view to utilizing the phosphorus content of these tailings for manufacturing fertilizer. This now is accomplished by milling the tailings in order to remove the iron obtainable from them. By the use of tables of the Hooper, and the Sutton, Steele & Steele pneumatic concentrating type, the gangue, which is composed mostly of silica and hornblende, is separated from the apatite. After the apatite crystals have been removed, they are mixed with barium sulphite, and the resulting product

LARGE HOOK CONSTRUCTED FROM SCRAP SHIP PLATE MATERIAL

is a first-class fertilizer called barium phosphate which is sold to dealers.

Book Review

Iron and Steel, by Hugh P. Tiemann; leather, 514 pages, 4 x 7 inches; published by the McGraw-Hill Book Co., and furnished by THE IRON TRADE REVIEW for $4 net.

Few books on iron and steel are as comprehensive, complete and yet as compactly arranged as Tiemann's "Iron and Steel, a Pocket Encyclopedia." In an endeavor to make a book as compact as possible and at the same time to give sufficient explanations for ordinary purposes so that the metallurgist, who wishes to refresh his mind on some term rarely used, and the person only slightly familiar with the subject, both might find the text useful, the author published the first edition in 1910. The second edition, published recently, is a revision of the first, not only of certain omissions and shortcomings, but also contains additional matter resulting from the friendly and helpful criticism the earlier edition received. In producing the last edition the first is practically rewritten, certain portions are condensed while other portions are made more complete by new references and later data. The number of terms as well as the text is increased about 50 per cent.

General processes of manufacture have undergone little change with the exception of the electric furnace which has seen remarkable development during the last few years. The information on this subject is very complete. The chief increase in text is due to more extensive discussions of subjects such as heat treatment, physical properties, testing and theoretical matter concerning metallography. The volume is arranged alphabetically and all references are made by page number rather than subject as it saves time in reference work.

Timekeeping Classifies Labor Cost

A SUCCESSFUL timekeeping system should not only afford an accurate and rapid means for figuring payrolls but should at the same time embody enough detail to give accurate statistics for determining a reasonable basis of pay for the various divisions of labor. Production cost and labor cost should not be confused, for although it is true that the former is dependent upon the latter, labor cost is by far the more important and it is therefore necessary to study labor costs in detail for the purpose of minimizing production costs. With these principles in view, the Cleveland Metal Products Co., Cleveland, is using the following system with good results and it has been found that fewer office assistants are needed than with the previous system.

Upon entering the factory each morning, the workman is given an envelope upon which he writes his name, number and department number. Before starting work, this envelope is given to the stock counter who files it until the close of the day. For each operation which the workman performs during the day, the stock counter makes out a record using separate forms for piecework, direct daywork and indirect daywork. These forms, which have spaces for data as to the operation, machine and product, have spaces also for the hours spent on the process, and in the case of piecework, the number of pieces turned out. For special contingencies such as a new man on a certain operation, bad stock, machine shut down, working without a helper or a man working on a boy's job, special time allowances are made as may be necessary until the condition is changed. The time clock system for marking slips is not used at present but that system probably will be adopted shortly. Each slip as it is made out is placed in its proper place in the workman's envelope. At the close of the day the department foreman, after approving the envelopes, forwards them to the production record department where they are checked up against stock reports. From there they are sent to the timekeeping department for payroll calculations.

Numbers are Index to System

For facility in handling records in the offices, each department has a number which it retains permanently. Each man in each department has a number which he retains so long as he remains in that department. New numbers are assigned at the first of every year and should any man quit during the year, his number remains dead until the first of the following year. Each process also has its number so that labor charges may be charged promptly to the proper process.

Upon receipt of the envelopes and operation slips by the timekeeping department, the rates of the labor are entered and the extensions or earnings according to each slip are calculated. The slips in each envelope are then totaled and the total hours and earnings for the day are entered on the envelope. Departmental daily balance sheets are made up from the data on the daily envelopes of each department. Each man's number, hours and earnings are entered on the balance sheet by an adding machine and the total hours and earnings of the department is thereby obtained. At the same time the hours and earnings indicated by the individual operation slips of the same department are totaled and the total compared to the total obtained from the envelopes. A check on the calculations up to this stage is thereby possible and should any difference be found, all figures must be rechecked. With the proper balance obtained, the envelopes are filed with other daily envelopes of the same workman and retained until the end of the pay period. The charge slips are then passed on to be used for further labor classification.

At the end of the pay period, the daily balance sheets of each department are recapitulated in one report which shows the daily earnings in each department for the period and the total for the period. Any reduction, such as tool charges, Liberty bonds and advances in pay, are made with the result that the net pay in each department is obtained. This sheet is then filed as a permanent record.

In calculating the individual pay of each workman prior to payment, the daily envelopes are taken from the file and the daily hours and earnings are entered by adding machine on a payroll card which is totaled. Any reductions for tools, Liberty bonds or money advanced to the man is deducted with the result that the net pay is determined. The total of the net pay as shown by the payroll cards by department must balance with the net pay for that department as shown on the recapitulation sheet. From these payroll cards the cashier is able to calculate readily the amount of small change needed from the bank in order to pay each man with exact change. Notification is given the bank in advance as to the amount of coin required so that payment of labor is not delayed.

A pay envelope with a receipt attached for each payroll card is next

made out by an addressograph. To avoid mistakes both the envelope and the receipt show the man's name, number and department number. They also show the gross pay earned, the deductions, the Liberty bond deductions and the net pay. Receipts are detached and given to the workmen just before payment while the envelopes are sent to the cashier to have the money put in them. Payment takes place in each department and upon presentation of the properly signed receipt at the pay window, the workman receives his pay envelope. In cases of shortage, the workman fills out a shortage slip on which he places his own record of time and earnings. The timekeeping department checks this slip with their record and any errors are rectified.

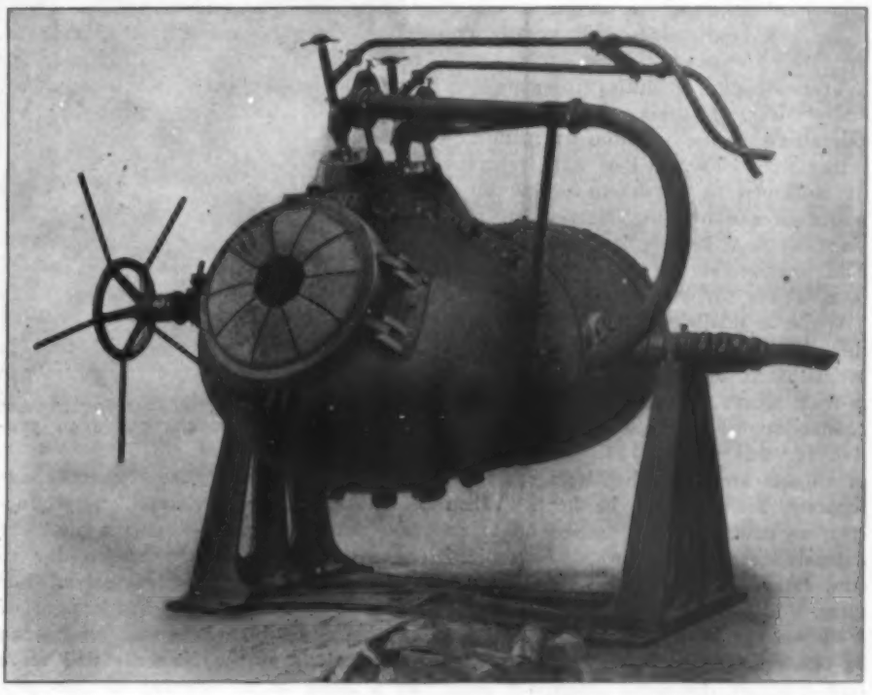
The daily operation slips, which were retained for labor classification, are sorted according to their charge number by departments and totaled daily. These daily totals are accumulated on labor classification cards monthly and these monthly totals are entered in the classification ledger. After the labor classifications are made daily, the time slips are filed according to the product, part and operation and at the close of the month each operation is totaled and entered on an operation record card. By making a detailed study of the labor figures thus obtained, deficiencies are discovered and their causes determined and remedied.

Water Quenching Gives Good Results

In the heat treatment of common steel shells for the United States government, the Westinghouse Electric & Mfg. Co. achieved satisfactory results from water quenching and it was only because of official orders from Washington that the company abandoned this method for oil quenching. This was one of the interesting features of a paper presented before a joint meeting of the Engineers' Society of Western Pennsylvania and the Pittsburgh section of the Heat Treaters' Research society at the Union Arcade auditorium May 20, by T. D. Lynch, research engineer of the Westinghouse company.

It was Mr. Lynch's contention that water at 40 degrees Cent., or at the boiling point, was a more satisfactory quenching agency than oil, in that water at that temperature was less drastic than oil and that excessive hardness and consequent heavy breakage could be readily traced to the shock of quenching at relatively low temperatures. Success with water quenching, however, was not reached without much experimentation. It was found that dropping the shell into a tank provided with water pipes on two sides and another with a spray nozzle projecting into the nose of the shell resulted in excessive hardness at the base of the shell. This was corrected in treating 6-inch shells by removal of the spray nozzle from the pipe leading into the inside of the shell, which brought about a more uniform distribution of the water around the shell in the quenching tank.

The paper was illustrated by lantern slides of tables giving the results of tests of treated material and by diagrammatic and photographic illustrations of heat-treating furnaces and quenching devices, and of water and oil treatment of 6-inch and 8-inch shells. Discussion of the paper was brief and centered around the merits of oil and water as quenching agencies in heat treatment.



NEW OIL-FIRED MELTING FURNACE DESIGNED TO MELT SIX TONS A DAY

Develops New Oil-Fired Melting Furnace

An elliptical noncrucible, tilting-type, oil-fired melting furnace manufactured by the Monometer Mfg. Co., Ltd., Whitehouse street, Aston, Birmingham, England, shortly is to be introduced in this country. This furnace was designed and patented by Isaiah Hall, managing director of the company.

As shown in the accompanying illustration, the furnace has an internal measurement of 2 x 3 x 6 feet and is said to melt from 1850 to 3000 pounds of metal in one charge. It is equipped with a connecting gear for tilting and the body can be lifted from the axis by a crane and carried to any part of the foundry or shop. Any temperature up to 1800 degrees Cent. can be obtained by means of a combined oil and air arrangement which is one of the features of the furnace. By this method, it is said, a white incandescent blanket flame without smoke or carbon deposit can be obtained. The consumption of oil and the amount of blast depend upon the quantity and grade of metal to be produced. Oil is supplied by gravity and the air pressure ranges from two to five pounds per square inch.

By means of a circular opening in the door, the condition of the charge during the blow can be seen, and this opening also acts as an outlet for the products of combustion. Necessary investigations may be made by temporarily cutting off the blast. The furnace can be used either as a converter or melting furnace and it has been stated that the approximate melting time for cast iron is from 45 minutes to an hour. Charging from 1250 to 3000 pounds of metal at a time an output of six tons per day of 10 working hours can be obtained, it is claimed.

In foundries where nonferrous metals are dealt with, arrangements can be made to have interchangeable bodies so that a lining can be kept in reserve for the melting of metals.

Fixing Land Factors in Production

Proper Division of Elements Necessary for Determination of Their Effect on Cost of Manufacturing—Reserve Holdings Must Not be Considered in Same Class as Those Which Are Productive

BY M. H. POTTER

IN determining the correct division of land factors as related to production costs the value of the land and expenditures should remain separate items and be reduced to a unit value. Of course, the unit value of sites will vary in wide limits. In some instances the cost of land is a large burden, while on the other hand low taxation in certain localities, together with comparatively low land values, will greatly reduce this overhead expense.

Transportation facilities for employes and products are the most important considerations in the selection of manufacturing sites. The need of large reserves of workmen to be drawn on at short notice necessitates the location of the plant near a densely populated center. The procurement of raw material also is a subject for consideration.

While a small factory must locate in the vicinity of a town where employes are situated, a large establishment may provide means of housing and living accommodations, and is not limited to location for this reason. When settlements or villages are established by a company, separate books should be kept. When such an undertaking is carried on to an extensive scale, a separately organized corporation should handle the development.

In many cases purchased land is held in reserve for future development, and such holdings, not being productive, must be considered separately from those which are productive. The initial expenditure and annual expenses in connection with nonproductive holdings must not be charged to indirect manufacturing cost. In considering production factors only land that is used for the purpose of manufacture should be included. The elements into which this factor may be divided follow: Taxes levied upon the value of the land; interest on mortgages or similar loans; rent; diminished value due to approach of lease termination; expense of protection.

Basis for Production Charge

Various arrangements of holdings involve different features entering into the determination of production factors, but land is not subject to depreciation except as to the time limit of the lease. It should also be understood that in the event of a company raising money on land holdings this is a matter of finance, and is not chargeable to production.

Additional land and connected expenditures must be charged to production and the same elements apply. The increase in the indirect burden due to this source need not be excessive. For this reason the correct consideration of the land factor is important, and when divided into proper elements will serve as a guide as to whether or not proposed extensions should be acquired.

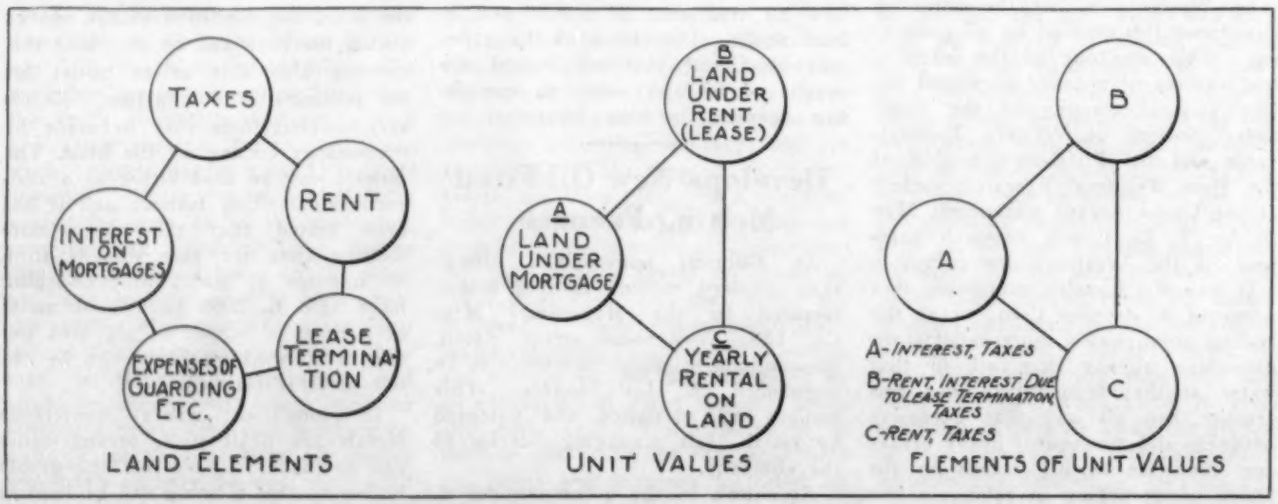
It is customary to determine all the various expenditures arising from the land and to include such expenditures in the "burden rate." Ordinary accounting methods do not segregate these expenditures into unit value, and their bearings upon production is not made clear. As the land factor does not consist of many elements the subdivision into unit value is not difficult.

Determination of unit value as related to land enables the management to observe fluctuations and to eliminate or establish new policies to overcome or decrease overhead arising from this source. Also, comparisons can be made which will lead to savings and decreases. Standardization, which is so greatly sought in all branches and departments, is effected and maintained by the use of this method of dividing land holdings.

Unit value as applied to land holdings is determined by the conditions under which the land is held. For example, an enterprise may hold and use for production purposes (A) land subject to mortgage, and at a later date may rent additional land (B) under lease, while at a later date more additional land (C) may be rented. Each unit represented by A, B and C will be subdivided into elements separately, and classified accordingly.

In charging these expenditures to production it is necessary to determine the actual kind of work performed, and the factory departments, of course, will determine the correct division. In some instances indirect production charges in A, B and C will be chargeable to the same department, while in other in-

This is the third article in a series on practical, factory-accounting methods, written especially for THE IRON TRADE REVIEW.



SYSTEM FOR DIVIDING LAND FACTORS AS APPLIED TO PRODUCTION COSTS

stances they must not be so charged. This is purely a matter of individual circumstances, and must be dealt with accordingly, but does not entail difficulties, as every industry is divided into distinct departments.

The principal elements of A are: Interest and taxes; B, rent, interest due to lease termination, and taxes; C, rent and taxes.

The accompanying chart serves to illustrate how land factors should be divided.

Plans to Utilize Spanish Waterpower

Proposals have been submitted to the Spanish government for developing the power of two waterfalls upon the upper reaches of the River Tera, in the province of Zamora. The Ribadelago fall will require a dam 98½ feet long by 9½ feet high, and the canal will be approximately 4 miles long, the greater part in tunnel through granite. The powerhouse will be situated on the north bank of Lake Sanabria. The net fall will be 1866 feet and 12,700 horsepower will be developed. The Cobreros fall will take its supply from Lake Sanabria. The River Tera enters by the west and flows out at the east. The net fall will be 351 feet, and 14,000 horsepower will be developed. The chief towns in the province, Benavente, Ponferrada, Leon, Palencia, will be supplied with current.

Gas Masks Have Industrial Limitations

DURING the past year the bureau of mines, department of interior, has received many inquiries regarding the use of army gas masks in the industries for protection against poisonous and irritating gases. These inquiries show a general belief on the part of the public that this type of mask will protect the wearer under all conditions against any gas whatsoever, even in absolutely irrespirable air to the exclusion of the more cumbersome mine rescue breathing apparatus. This erroneous belief will no doubt be further confirmed by millions of discharged soldiers who have been trained in the use of the gas mask and have been taught that it gives them absolute protection against all gases used in warfare or likely to be used. These men will not realize that out in the open air of the battlefield, the percentage of gas in the air can never be anywhere near as large as may occur in the confined spaces of a factory operation. A mask may afford complete protection under outdoor conditions and break down at once when used indoors where a gas container has burst and filled the room with a greater concentration of gas. It must also be remembered that the absorbents in the army respirator, which filter out the poisonous gas, are specially designed for the gases used in warfare, and as a matter of fact do not protect against the more common industrial gases as, for example, illuminating, natural, producer and blast furnace gas.

The army gas mask never should be used in mines, because of the uncertainty there is of the kinds and amounts of gases in the atmosphere and liability of insufficient oxygen to support life.

The army gas mask consists of a face piece of rubber and cloth fabric, containing eye pieces and connected by means of a flexible rubber tube to a canister containing charcoal and soda-

AIRTIGHT CHAMBER IN WHICH GAS MASKS ARE TESTED UNDER VARIOUS CONDITIONS

lime for filtering out the poisonous gas from the inhaled air. The canister is supported in a knapsack slung from the neck.

The army gas mask is by no means the unusual protective appliance that it is popularly believed. It does *not* afford universal protection against all gases, nor can it ever be used safely in low oxygen atmosphere. It furnishes no oxygen to the wearer and can only remove comparatively small percentages of poisonous gas from inhaled air, usually less than 1 or 2 per cent. Higher percentages will immediately penetrate the canister and "gas" the wearer. The standard army gas mask will furnish protection against percentages not exceeding 2 per cent of the following gases in air: Sulphur dioxide, hydrogen sulphide, chlorine, carbon bisulphide, nitrogen peroxide, anoline vapor, benzyl bromide, benzyl chloride, chloracetone, chlorpicrin, hydrogen chloride, phosgene, sulphur chlorides, xylyl bromide, stannic chloride, titanium tetrachloride and silicon tetrachloride.

It will be seen from the foregoing that the field of usefulness of the army mask is confined to certain of the chemical industries, around smelters and roasters where sulphur fumes are given off and in the industries using chlorine and bleaching powder. The army canister also contains cotton filter pads which remove irritating and poisonous dusts, which increases its usefulness around smelters where sulphur and arsenic fumes must be removed.

The army mask furnishes no protection whatever against carbon monoxide. This is the poisonous constituent of blast furnace, producer and illuminating gases, and of mine gases after fires and explosions in coal mines. Carbon monoxide is also likely to be present in ordinary fire-fighting conditions met by fire departments. Moreover, in all of these cases there is likely to be a deficiency of oxygen. Therefore, for adequate protection against these conditions the oxygen breathing apparatus must be used, and reliance on the army mask may be fatal.

The bureau of mines is working on a carbon monoxide mask and hopes to develop one that may be used in the future for low concentrations of this gas, but such a mask is not now available.

Ammonia is another gas that will penetrate the standard army canister. However, a special chemical may be placed in the army canister which will adapt it for use around refrigerating plants.

The self-contained oxygen breathing apparatus can never be displaced by the gas mask for use in atmospheres deficient in oxygen. Such atmospheres are encountered in mine rescue work, in gas mains, blast furnace stoves, gasoline tanks, etc. Aside from the lack of oxygen, carbon monoxide is also present, for protection against which the army mask is useless.

The oxygen breathing apparatus must also be used instead of the army gas mask wherever there are large quantities of irrespirable or poisonous gases, as for example, in

entering a gasoline tank containing some residual liquid, or similar tanks, towers and other closed spaces. The concentration of vapors produced by volatile liquids in closed containers is too high to be entirely removed by gas mask absorbents. The only recourse in such cases is a self-contained appliance in which the wearer does not breathe any of the irrespirable atmosphere.

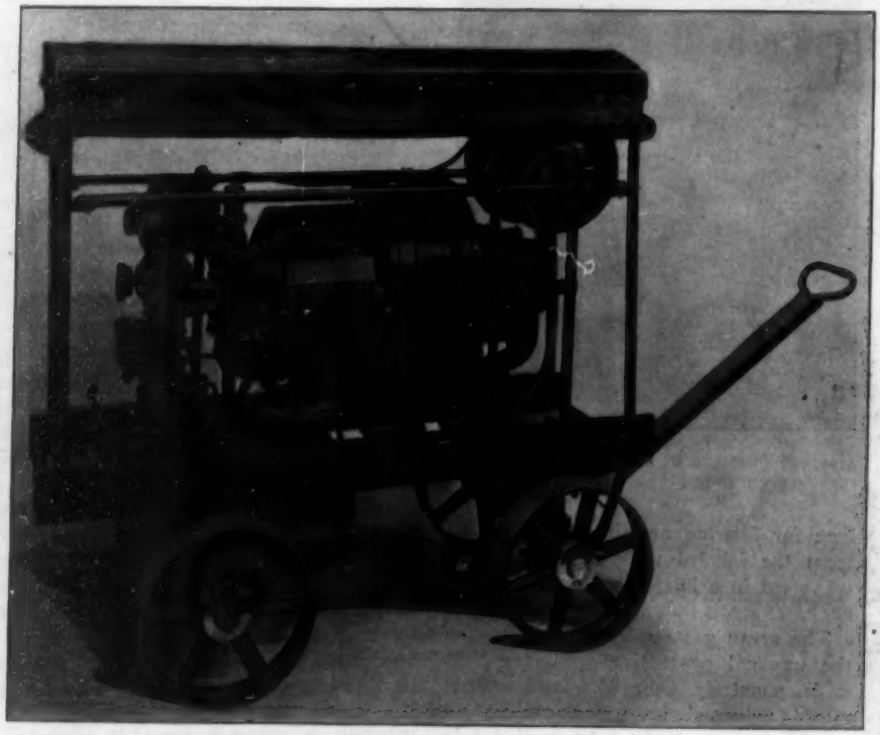
A number of tests of gas masks and respirators are being conducted by the bureau under the direction of A. C. Fieldner, who during the war was in charge of the gas mask research division of the chemical warfare service at Washington. Present activities for the most part consist in working up a set of standards for testing the various kinds of apparatus and gases. In addition to several laboratories completely equipped for mechanical testing of gases and smokes, a thousand cubic foot gas chamber, as shown in the accompanying illustration, has been installed adjacent to the laboratories in the basement of the bureau of mines building. Canisters are put into machines and gases are forced through at various degrees of pressure and temperature. Comparisons are made from the samples of gases taken going in and coming out of the canisters. All canisters, both in smoke and gas investigations are first put through machine tests. In tests against smokes, which are driven through the filter containers in finely dispersed particles, the fact has been disclosed that tobacco smoke will pass through a filter of paper and cloth.

The real test of the mask or respirator, however, is in the gas chamber, shown in the accompanying illustration. This chamber, which is of sheet steel and glass construction, is absolutely airtight. Concentrations of gas are introduced into the chamber and a man, equipped with the apparatus to be tested, enters the chamber. Results are obtained by comparing the volume of his breathing to that of normal breathing, eight to 50 liters per minute.

Formal dedication of the new $1,000,000 laboratories and workshops of the bureau of mines, department of the interior, at Pittsburgh will be held Sept. 29, 30 and Oct. 1. The bureau has again turned its attention to peacetime problems after having devoted almost its entire energy to the solution of war problems. The different laboratories of the bureau have been completely equipped for investigation of various problems relating to greater safety and efficiency in the mining and metallurgical industries. Visitors will be invited to the electrical and mechanical workshops and laboratories of the bureau and also to the petroleum, gas and coal laboratories, the testing gallery of the mine safety section and the industrial gas mask section.

At the time of the dedication a safety-first meet will be held in which many teams of miners from all over the country will compete for cups and medals. Contests in rescue work and in first aid to the injured will prove a major attraction and, since a large number of teams have entered, it will be necessary to hold a preliminary or elimination meet before staging the finals and making awards. These events will take place on Forbes baseball field.

Another point of interest will be the experimental mine of the bureau at Bruceton, Pa., 12 miles from Pittsburgh, where an actual explosion of coal dust will be conducted for the visitors. At the experiment station a complete exhibit representing the mining and metallurgical industries of the country will be shown. Present plans also propose visits to a few of the typical Pittsburgh industries.



NEW PORTABLE ELECTRIC ARC WELDER

Arc Welding Apparatus Mounted on Wheels

Several types of electric arc-welding machinery designed to meet the requirements of machine shops, railroads and shipyards, have been developed by the United States Light & Heat Corp., Niagara Falls, N. Y. Stationary equipment is recommended for shops where the parts to be welded can be brought to within 50 or 75 feet of the welding apparatus. A portable machine, which is shown in the accompanying illustration, has been designed for use in shops where the welding apparatus must be carried to the work. It is stated that with a rated capacity of 4 kilowatts, the arc-welder gives a direct current of 200 amperes or less, with an arc voltage of from 17 to 22 volts and an open circuit voltage of from 35 to 65 volts. The welder is made in the form of a converter for use on 100 to 125-volt direct current circuits only, and in the form of a motor-generator for all other alternating current and direct current circuits. Although weighing only 665 pounds, the converter is said to deliver current at the arc through the arc stabilizing reactor with an efficiency of from 65 to 70 per cent.

The motor-generator type consists of a 7½-horsepower alternating or direct current motor on the same shaft with a 4-kilowatt welding generator. The portable equipment consists of a truck equipped with a motor-generator or converter, a panel, reactor, cover and cable reel. The truck is 28 inches wide, 55 inches high under cover, and 54 inches long. The truck with complete equipment weighs approximately 1500 pounds.

New Epoch in Pan-American Trade

Delegates to Commercial Congress See Great Future in Their Plans For Closer Business Relations—Schwab, Hurley, Vanderlip and Barrett Speak on Prospects and Opportunities

WASHINGTON, June 10.—Trade opportunities in pan-America were discussed in nearly all phases at the second pan-American commercial conference held here last week. Representatives from all countries in the western hemisphere expressed their views in speeches and discussions or in private conference in the rooms of the Pan-American Union where the commercial conference, the first in eight years, was held under the guidance of John Barrett, director general of the union. Mr. Barrett expressed what is generally conceded as the view of those who attended: "A new epoch in pan-American commercial relations has been inaugurated as a result of the conference."

While all the addresses contributed to an understanding the needs of the Americas, three speeches were particularly illuminating as to what has been accomplished in the commercial development of the two continents, what is to be done in furthering trade expansion and what must be done if the western hemisphere's resources are to be utilized to the fullest extent. These addresses were by Charles M. Schwab, chairman of the Bethlehem Steel Corp., Edward N. Hurley, chairman of the shipping board, and Frank A. Vanderlip, until recently president of the National City bank.

Mr. Schwab explained what his company has done in the development of the trade relations of North and South America. He said he is building 20 of the largest cargo ships that have ever been built, each to carry 20,000 tons of ore from various states in the southern continent. He said his company owns and operates the largest docks and shipping facilities in South America, located in Chile. In speaking of the development of the steel industry in the United States, Mr. Schwab said:

"The great future development is going to be on the east coast. We must depend upon our friends in the South for the raw materials to make the East the successful steel manufacturing center of the United States and so much confidence have I and my company in the honorable intentions and treatment of American capital that I am risking my all, my fortune, my reputation, my company, upon the basis of securing the raw supplies of ore and other materials from the South American republics."

Already 226 vessels of 863,334 deadweight tons have been allocated to the Latin American trade, Chairman Hurley declared. More important, he said, is the fact the shipping board "is now surveying the situation in order to promote the establishment of regular American lines between the United States and South America. These will compare favorably with the former services of the European lines, and will even surpass them." The shipping head then told of the progress being made in speed, convenience, facilities, etc., for the accommodation of travelers between the two continents and for their commercial advantage.

Mr. Vanderlip declared that only a prompt influx of raw materials and foodstuffs into the idle centers of Europe can prevent a conflagration worse than that through which the world has passed. North and South America must furnish this material and food, not in a charitable sense, nor in a sense of receiving cash in payment, but on a basis of well secured credit. He said the positions of the old world and the new have so changed, as a result of the war, that we now are really the old world, as far as being able to help the other.

Water Plant

Of Steel Works Inspected by Engineer Guests of Scaife Company

Three hundred members of the Engineers' Society of Western Pennsylvania and others were the guests of William B. Scaife & Sons Co., Pittsburgh, chemists and engineers, at an inspection of the boiler feed water treating and purifying system of the Republic Iron & Steel Co., at Youngstown, O., June 7. This plant, which was installed by the Scaife company and is one of the largest in the world, was the subject of a recent paper presented before the members of the Engineers' Society of Western Pennsylvania by S. H. McKee, assistant chief engineer of the Republic Iron & Steel Co. Later the company extended the invitation and chartered a special train from Pittsburgh to Youngstown, to enable the members of the society living in or near Pittsburgh to see the plant in operation. At Youngstown, the party was joined by a number of other guests. Inspection of the plant, which was conducted by Scaife and Republic Iron & Steel men, completed, the party was tendered a dinner at the Hotel Ohio.

The plant has a treating capacity of 300,000 gallons per hour, and is so laid out that an extension of 25 per cent can be made, giving it an ultimate treating capacity of 375,000 gallons per hour. A 2-compartment intake is located on the bank of the Mahoning river, each compartment being provided with stationary and motor-driven traveling screens and with sluice gate valves operated from yard level, to enable each compartment to be cut off from river connection. Concrete tunnels connect each section of the intake with a separate pump well under the pump room in the softening plant.

The operating and filter building and the reaction and settling tanks, eight in number, in two parallel rows, occupy a plot 260 feet long and 79 feet wide. Stairways and platforms give ready access to the top of the tanks, while tunnels and passage ways under the tanks make the filling and delivery piping and operating mechanisms easily accessible for inspection and repairs.

Each pumping unit consists of a single stage double suction centrifugal pump driven through reduction gears by a condensing steam turbine. Raw water from the supply pumps is delivered to the reaction and settling tanks through pipes connected through the bottoms of the tanks. The water after being treated and settled is drawn from the tanks through a floating outlet pipe, which takes the water from the top and follows the descending level until a stop carried on the pipe rests on the bottom of the tank and delivered to the filters and thence to the purified basin or clear well.

Delivery of the water from the reaction and settling tanks to the filters is controlled by double disk balanced valves operated by a float in each filter. The rate of the flow of softened water is controlled by the level in the clear well, which when full, the inlet valves automatically operate to hold back the water in the settling tanks.

Perfects Federal Tool Selling Plan

War Department Evolves Through Machine Tool Section Workable System for Disposal of Machinery From 500 Plants Rendered Idle by Cessation of Hostilities —District Offices to Have Complete Lists

WASHINGTON, June 10.—Complete appraisal of machinery and machine tools taken over by the war department from approximately 500 plants which have been engaged in supplying war equipment to it has been compiled and the values established by the machine tool section. This is shown by the accompanying graphical chart adopted by the director of sales office of the section for the disposal of surplus equipment. This work was undertaken along with the compilation of inventories and its results made public today.

The aim of the machine tool section was to eliminate as far as possible the variable factor arising from individual opinion. The subject was taken up early in February, about one month after the section was created, with the several bureaus of the war department and the war industries readjustment committee of the American Society of Mechanical Engineers, consisting of G. K. Parons, New York consulting engineer; Erick V. Oberg, New York, editor of *Machinery*, The Industrial Press, and Frederick A. Sheffler, New York, supervising engineer. As a result of these co-operative efforts the appraisal chart was adopted late in May at a conference in New York participated in by members of the war industries

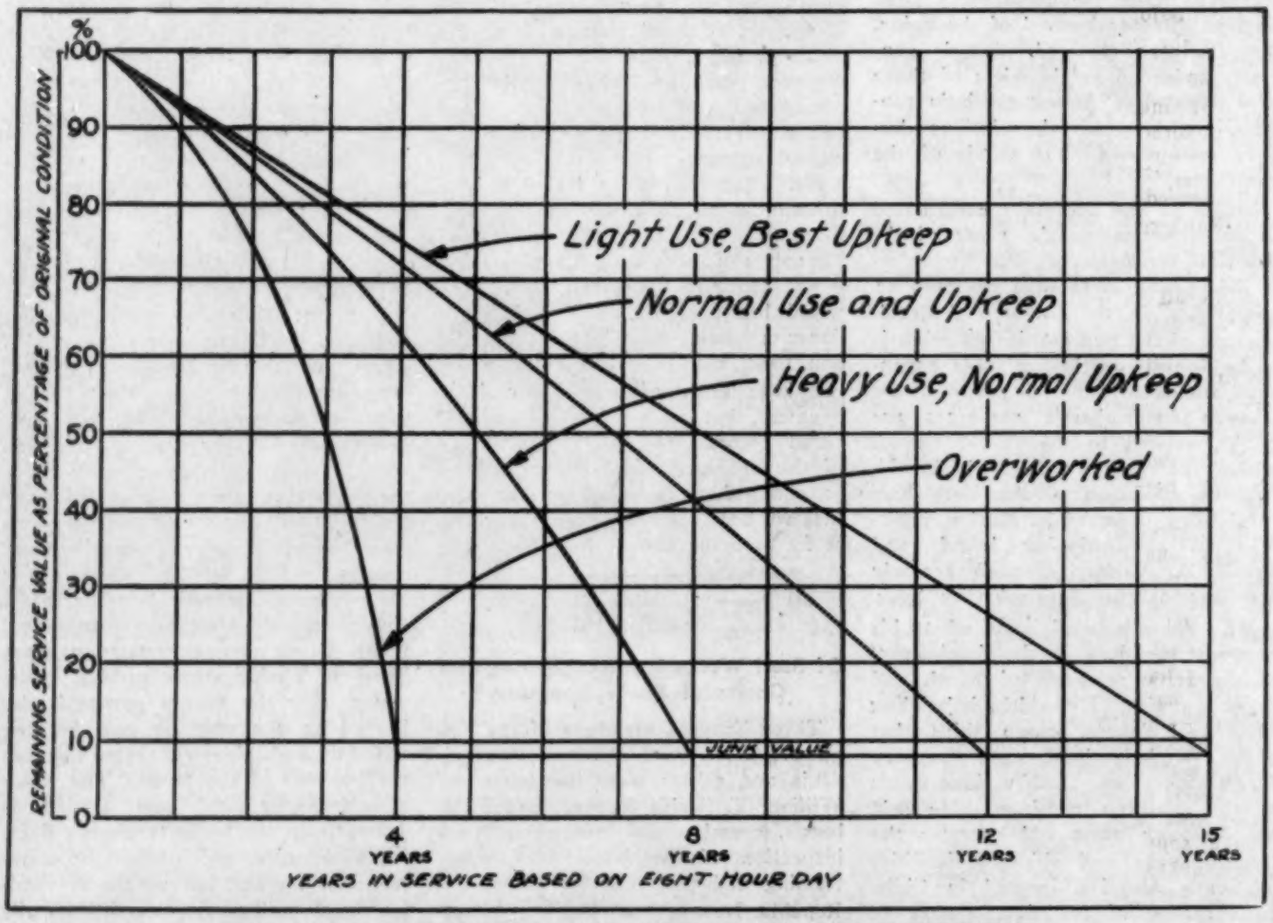


CHART FOR USE IN APPRAISAL OF STANDARD MACHINE TOOLS TO DETERMINE SERVICE VALUE

A—In using this chart ascertain from best sources, as completely as practicable, preferably from shop superintendents, foremen, United States inspectors or plant records, for each tool or group of tools: 1, actual time of use in years; 2, average number of hours per day in use; 3, class of usage and upkeep (see curves).

B—Reduce the actual time of use (A1) to the equivalent standard 8-hour day usage by the reduction factor obtained from small chart on the right.

C—Enter main chart with equivalent years of use (B) on base line, read vertically to appropriate curve (A3), then horizontally to left for percentage of condition. This percentage is to be recorded on inventory card unless altered in accordance with paragraph following (D).

D—Examine the tool for evidences of:

1. Exceptionally good care maintenance and operation above normal. If justified, the percentage derived under preceding paragraph (C) may be increased, but not to exceed 5 per cent.

2. Abuse or exceptionally poor care, either in usage, upkeep, handling or storage, below normal. If justified, the percentage derived from preceding paragraph (C) may be decreased, but, in general, not more than 10 per cent. The use of the overworked curve will cover most cases.

3. Broken or missing standard parts or equipment. This can be taken care of by an appropriate reduction from the percentage previously determined, unless cost of replacement can be estimated with reasonable accuracy, which is preferable.

4. The percentage determined by consideration under paragraph C, as altered under paragraph D, is to be entered on the inventory card, and noted in "Remarks" with brief statement of reasons for the exercise of special action.

E—Original cost, market price, obsolescence, amortization and demand are not to be considered in using this chart, but as separate factors in price determination.

Example: The machine was in use the equivalent of six years with normal use and below normal upkeep.

Method of application: Enter the chart along base line at 6, follow vertically to "normal use and upkeep" curve; read horizontally to left to 57 per cent by use of judgment under D2, it is determined that 5 per cent should be deducted; 57 per cent less 5 per cent gives 52 per cent. Entry on card, "Condition 52 per cent." In remarks, "Normal use; 5 per cent deducted for below normal upkeep."

readjustment committee and Maj. C. E. Fitch and Maj. G. B. Dusinberre of the ordnance department, C. E. Hildreth, chief of the machine tool section, and V. C. Kylberg, assistant of the section.

Guided by this chart, the person making the inventory also fixes a condition appraisal, working in conjunction with three practical machine men at the plant, which shows the service value of the machinery. With this information the section will be in a position to apply a uniform method for arriving at selling prices by means of a price chart. The section will be able to recommend sales policies and methods and proceed to the establishment of prices.

Having fixed the prices on the machinery, the section will then catalog it. As each tool is inventoried, appraised and priced, it will be listed with all the zone or district offices of the war department, so that each sales office will be in a position, whether the machinery desired is in its territory or elsewhere, to furnish to prospective purchasers complete information as to the number of each tool type on hand at any time, the location of the equipment, its condition and the prices asked by the government.

The charts show the system of appraising the machine tools, the larger denoting years in service based on the 8-hour day, and standards being determined by the use to which the equipment has been put. The smaller chart provides for the reduction factor for use where shops have operated at other than eight hours a day. The base line shows the junk value of the equipment and explanatory notations denote how values are reached.

Before the policies and methods of sale could be determined, or prices to be asked for the equipment could be arrived at, it was necessary to establish a uniform system of inventorying that would show the quantity of machine tools to be disposed of, describe and locate each tool, and give its present condition. This information was essential to assure the government a fair value for its property and to facilitate reasonable bids from prospective buyers of the machinery when they desired to purchase.

Disposal of Surplus Equipment

Taking up the general policies disposing of surplus equipment, it is pointed out in a statement from the office of the director of sales that the signing of the armistice practically suspended operations in approximately 500 producing plants in the United States which, operating under government lease or contract, were engaged in supplying equipment to the various war department bureaus. Aside from the government arsenals, practically all of these plants were turning out, as component parts or finished products, materials which were foreign to their peacetime production. This conversion to government needs had necessitated, in many instances at least, the installation of new machinery and the construction of plant additions. To stimulate the production of the commodities on which they were engaged, the war department had provided the funds with which the machinery had been purchased and the additions constructed.

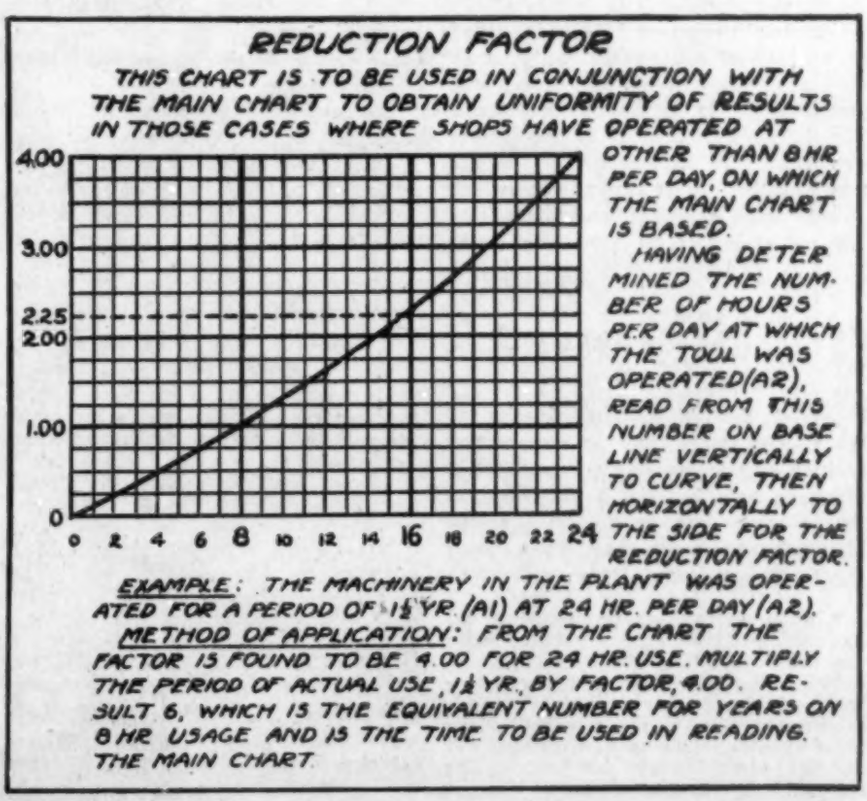
Consequently, when the need for further production of the war material ended with the cessation of hostilities, the department had to take over the surplus commodities held by these emergency manufacturers and the plant facilities and equipment that their assumption of war work had entailed.

The duty of recovering as large a percentage as possible of the vast sums of government money tied up in surplus war materials devolved upon the war department, and a policy for effecting this purpose had to be evolved. To flood the market with the stocks of commodities held by the government contractors and the machinery with which they had been manufactured would mean not only their sacrifice, but the upsetting of industrial conditions in general.

To preclude such a situation, the office of the director of sales was created. President Wilson, proceeding under the act of July 9, 1918, by which the sale of surplus material was authorized, had appointed Benedict Crowell, assistant secretary of war, to organize a selling force to dispose of this surplus, and Mr. Crowell, in turn, by a war department order of Jan. 17, 1919, designated C. W. Hare, then assistant director of munitions, as director of sales with authority to make sales for the war department in accordance with the provisions of the act mentioned. The actual selling of surplus war materials is done by the several bureaus of the war department by which title to property to be disposed of is held.

These sales of surplus to the general public are made in accordance with the following rules formulated by the director of sales:

(a) For cash at auction.
(b) To the highest bidder on sealed proposals on due public notice and in such market as the public interest requires.
(c) At the current market price, if there is an established market for such property and current market quotations accompany the report of the sale. No sale at the current market price shall be made except under continuously maintained competitive conditions and with full publicity.
(d) By negotiations under competitive conditions, and providing the price obtained is the highest of not less than three independent competitive bids.


REDUCTION FACTOR
THIS CHART IS TO BE USED IN CONJUNCTION WITH THE MAIN CHART TO OBTAIN UNIFORMITY OF RESULTS IN THOSE CASES WHERE SHOPS HAVE OPERATED AT OTHER THAN 8 HR PER DAY, ON WHICH THE MAIN CHART IS BASED.
HAVING DETERMINED THE NUMBER OF HOURS PER DAY AT WHICH THE TOOL WAS OPERATED (A2), READ FROM THIS NUMBER ON BASE LINE VERTICALLY TO CURVE, THEN HORIZONTALLY TO THE SIDE FOR THE REDUCTION FACTOR.
4.00
3.00
2.25
2.00
1.00
0
0 2 4 6 8 10 12 14 16 18 20 22 24
EXAMPLE: THE MACHINERY IN THE PLANT WAS OPERATED FOR A PERIOD OF 1½ YR. (A1) AT 24 HR. PER DAY (A2).
METHOD OF APPLICATION: FROM THE CHART THE FACTOR IS FOUND TO BE 4.00 FOR 24 HR. USE. MULTIPLY THE PERIOD OF ACTUAL USE, 1½ YR., BY FACTOR, 4.00. RESULT 6, WHICH IS THE EQUIVALENT NUMBER FOR YEARS ON 8 HR USAGE AND IS THE TIME TO BE USED IN READING THE MAIN CHART.

War Contractors Welcome Inquiry

Only Points They Insist on Are That Federal Investigation of Expenditures be Devoid of Politics and That Labor's Demands be Taken Into Consideration—Probe May Take Five Years

WASHINGTON, June 10.—Inquiry into war expenditures determined upon by the house of representatives at the request of Republicans will acquire a wide range, according to present plans. Disbursements of every kind will be scrutinized.

Some members of the house believe this undertaking cannot be completed in less than four or five years and that it will call for investigation of no less than 100,000 contracts made in the United States and in foreign countries. Included in the list are many contracts with iron and steel producers. There has been considerable discussion in congress relating particularly to informal contracts.

Both Republicans and Democrats favor the investigation, and manufacturers holding war contracts say all facts should be brought out so the record may be made clear and the public acquainted with the facts. The latter insist that the investigation be fair and open and devoid of politics.

Although Democrats charge that Republicans proposed the inquiry for political purposes their so-called evidence to this effect has not proven convincing to disinterested sources. There are many, however, who claim that the Democrats are justified in their complaint that the political division of the committee of 15 which will have charge of the investigation is not equitable, inasmuch as it consists of 10 Republicans and five Democrats, headed by Chairman Graham of Illinois.

Investigations following the Civil and Spanish-American wars, it is pointed out, did not bring about any constructive results, but the Republicans say the one about to be made will go to the root of the situation.

The investigation, as now contemplated, will relate to the war department expenditures only, which up to May 1, 1919, amounted to $16,300,000,000. Of this sum, $4,323,000,000 was spent for ordnance, $948,000,000 for aircraft, and $974,000,000 for camps, cantonments and manufacturing establishments. These expenditures, which some Republicans say are excessive, even allowing for much wastefulness attendant upon hasty preparations, compare with average war expenditures of $123,500,000 in 1914; $126,000,000 in 1915, and $132,000,000 in 1916.

Labor Investigation Desired

While manufacturers welcome the inquiry, they hope the committee will not develop any timidity in looking into the demands of labor. It is believed this phase of the investigation may prove to be one of the most interesting parts of it.

Majority Leader Mondell says the investigation will be nonpartisan and that it was ordered because the people of the country demanded it.

Contracts numbering 1137 were settled up to May 24 and awards approved by the claims board of the war department, according to an official announcement. For the week of May 17-24 the number was 117. The settlement costs of the total number of contracts on which awards were approved was $32,667,000. The net saving of the total is given as $137,165,000. The per cent of the value of uncompleted portions saved was 81 up to May 24.

The value of ordnance which on May 31 it was proposed to complete was less than $50,000,000, of which about 65 per cent was for artillery. Rifles, bayonets, and small arms ammunition now are being produced at arsenals only. More light Brownings are to be accepted to bring the total accepted to more than 100,000.

A report received from the chief ordnance officer, American expeditionary forces, shows that on April 15 the shipment of some items was nearly completed. Of 227 six-ton Renault tanks received from the French, 213 had been shipped and of 208 eight-inch howitzers received from the British and from the United States, 202 had been shipped. About half of the 75-millimeter guns and 155-millimeter guns had been shipped.

Total receipts from sales of surplus property reported to the director of sales up to May 23 amounted to $252,385,121, representing 86 per cent of the original cost to the government of the material sold. The value of sales of nonferrous metals and scrap was $16,290,759, which was 6 per cent of the total, while receipts from this class of sales was $15,365,208 or 57 per cent of the original cost.

The estimated value of all surplus property of the department on Jan. 1, 1919, was $1,931,500,000, while the estimated cost of material sold was $293,398,000, or 15 per cent of the amount sold.

Plans Saving; Shaping Ship Policy

WASHINGTON, June 10.—Coincident with the publication of a letter from Edward N. Hurley, chairman of the shipping board, to chairman Good, of the house committee on appropriations, asking for funds and outlining the shipping problem, the committee on merchant marine and fisheries has been authorized to begin an inquiry as a preliminary to formulating a policy regarding the merchant marine.

Mr. Hurley points out that during the 19 months the United States was at war, the Emergency Fleet corporation expanded the shipbuilding capacity of the United States from an unimportant position to first place in the world. At the same time, he said, it has increased the overseas merchant fleet of the United States from a negligible quantity to second place. He states:

"Our program has been molded, and its closing-out has been planned with the idea of leading the two industries (shipbuilding and ship operating industries) congress consigned to our administration during the war up to the point at which they may strike out and develop on a commercial basis. The consummation of our efforts is dependent upon and now awaits the action of congress in granting our requests for funds, and in directing the manner in which we shall dispose of the government fleet."

Mr. Hurley asks for $673,368,301 in addition to $2,625,451,000, which has been appropriated as against $3,671,000,000, which has been authorized, a difference of $372,180,699.

The shipbuilding program has been greatly reduced since the signing of the armistice. The board has suspended or canceled contracts for 754 ships aggregating 3,797,825 deadweight tons, which

would have cost $797,564,276 to complete. The cost of canceling these contracts will be about $202,853,456, and the saving effected by cancellations will approximate $594,710,820.

Actual expenditures and net commitments for shipyard construction, housing, transportation, etc., amount to $270,482,975, and it is estimated that the salvage will be $81,272,700. This means, it is explained, that the board shall have to charge off from shipyard, housing and transportation investment, $189,210,275, which is 5.6 per cent of the total amount congress has appropriated and is requested to appropriate. After stating other items of expenditures, Mr. Hurley says $2,861,755,570 is left to be accounted for in ships. For this sum the board has had built and expects to have built 2434 vessels aggregating 13,885,106 deadweight tons.

"On its face," he continues, "this ration of tonnage to monetary outlay would indicate a cost of $206 a deadweight ton. However, the actual cost of the ships to the government is considerably less than this amount for the following reason.

"Some shipbuilders have paid into the United States treasury income and excess profit taxes aggregating $40 a deadweight ton on the vessels they have constructed. Others have paid the equivalent of $30 a ton. It is estimated that at least $25 a deadweight ton has been returned to the treasury in this manner by all shipbuilders. This $25 does not include any taxes paid by the hundreds of subcontractors who manufactured the steel, the boilers, the machinery and the many other things which go into ships; but when multiplied by 13,885,106 deadweight tons, it indicates a rebate of $347,127,650, which, when subtracted from $2,861,756,570, leaves $2,514,527,920, or $180 a deadweight ton as the actual cost to the government of the fleet which played an essential part in the winning of the war, and which is now a permanent commercial asset of the American people."

The inquiry of the house committee on merchant marine and fisheries will cover a wide scope. It is proposed to investigate control by the shipping board over freight rates; to inquire into the subsidy question; to investigate the policy of continuing the right of foreign ships to operate in the coastwise trade; the necessity of improvements of ports and harbors, and investigation into the relations of railroads to ships to see wheather some joint action cannot be taken with regard to freight rates.

The shipping board would lose its right to deny to domestic shipyards the right to build steel ships for foreign account if a bill of Senator Jones, chairman of the committee on commerce, is passed. The committee has ordered a favorable report. The law would permit American yards to construct steel ships for foreign account without first obtaining a permit from the board.

Canadian Tariff

To be Lowered on Few Articles—Western Members Bolt

Toronto, Ont., June 7.—Sir Thomas White, Canadian minister of finance, in delivering his annual budget speech in the house of commons, Ottawa, this week announced that it is not practicable at this time to make a general revision of the tariff, as international trade is still unsettled. He hoped that within a year conditions will permit of a general revision. In the meantime the following changes were proposed: A reduction from 27½ to 15 per cent of the duty on cultivators, harrows, horse rakes, seed drills, manure spreaders and weeders and complete parts thereof; a reduction from 27½ to 17½ per cent on plows and complete parts, windmills and complete parts, portable engines and traction engines for farm purposes, horse-power thrashing machines, separators and appliances therefor; a reduction from 32½ to 20 per cent on hayloaders, potato diggers, fodder or feed cutters, grain crushers, fanning mills, hay tedders, road or field rollers, hole diggers and other agricultural implements, and wagons.

Western members who asked that agricultural implements be placed on the free list, and for a general downward revision of the tariff are much dissatisfied. T. A. Crerar, minister of agriculture, who represents a western constituency, has resigned, and it is anticipated that his action will be followed by a bolt of many of the western members.

President Mark Workman, of the Dominion Steel Corp., states that export business is assuming larger proportions, and the company has booked substantial orders for overseas shipment. The prices at which the business was secured are above those which prevailed recently. Prices, he said, are showing a tendency to work to higher levels. The demand for steel products, in his opinion, will soon become very urgent.

The need for standardizing farm machinery was brought before the committee on agriculture of the Canadian house of commons May 21 by A. B. McCoig, M. P., who spoke of the increase in the cost of machinery to the farmers because parts of the machines are not interchangeable.

The Algoma Steel Corp., Sault Ste. Marie, Ont., has received an order from the Canadian government for 10,000 tons of rails. This is the second order the company has received in the past few days, the first being from the Belgian government for 8000 tons of rails. The Canada Forge Co., Welland, Ont., has received orders for marine forgings sufficient to keep its plant operating to capacity for several months.

Midvale's Building Plans Involve $8,000,000

New construction plans as decided upon at a recent meeting of the board of directors of the Midvale Steel & Ordnance Co., involve the expenditure of approximately $8,000,000. Work is to commence at once and will be pushed to completion as rapidly as possible. The major portion of the fund will be used in improvements at the plant of the Cambria Steel Co., Johnstown, Pa., installing modern equipment, etc.

As a result of this board meeting, the company's employes will benefit in numerous ways, chiefly by the pension system established to go into effect as of July 1. Another plan authorized at this meeting makes it possible for employes to build their homes on funds borrowed from the company and reimburse it inside of 12 years. The statement as issued by the board of directors is dated June 5 and reads as follows:

The board of directors of the Midvale Steel & Ordnance Co. has authorized an extensive reconstruction program, for which approximately $8,000,000 will be required.

A large part of this amount will be expended at the blast furnaces and open-hearth department of the Franklin plant of Cambria Steel Co., Johnstown, Pa., in replacing wornout equipment and modernizing the plant.

Other important items are as follows: Reconstruction of boiler houses and steam system generally; additional heating facilities at plate mill; replacing the present hospital for Cambria employes at Johnstown with a new hospital equipped with all modern improvements. At Nicetown, an electric furnace will be erected, and present bar mills rearranged for the efficient production of tool steel and other bar specialties. At Coatesville, the principal item will be the construction of a large plant for the special heat treatment and finishing of plates and other steel products.

The board also authorized the establishing of a pension system for employes, which will become effective July 1, 1919.

The directors and officers of the company firmly believe that the interests of the company are identical with those of the communities in which the various plants are located. They also believe that the ideal American community is one in which all, or at least a majority of the citizens own their own homes. In order to assist in bringing about this condition a comprehensive plan was authorized yesterday whereby employes will be materially assisted in the purchasing of homes. Under this plan the company will advance 90 per cent of the total cost, and will extend payments over a maximum period of 12 years.

Welcome A. F. A. President

British Foundrymen's Association and Other Societies Hold Special Meetings—Praise for British Foundry Practice

THREE special meetings of the British Foundrymen's association were held in Coventry, Sheffield and Birmingham, Eng., on April 30, May 3 and May 5 respectively in honor of A. O. Backert, president of the American Foundrymen's association, who recently made a trip to Europe. In the meeting at Birmingham on May 3 the Birmingham Metallurgical society, the Birmingham local section of the British Institute of Metals and the Staffordshire Iron and Steel institute cooperated with the local section of the British Foundrymen's association. The meeting at Sheffield was a national affair in which members of the British Foundrymen's association from London, Birmingham, Coventry, Derby, Peterborough, Mansfield, Keighley, Manchester, Loughborough, Leicester, Newcastle-on-Tyne, Luton, Dumbarton and numerous other points in the United Kingdom participated.

The first function was a complimentary dinner given by the Coventry branch of the British Foundrymen's association on Wednesday, April 30, at the Masonic hall, Coventry, Eng.

The president of the American Foundrymen's association was warmly welcomed by Andrew Harley, president, Coventry branch, B. F. A., who proposed a toast in honor of the guest. He pointed out that it was the first occasion on which a president of the American Foundrymen's association had visited England in his official capacity. Mr. Harley said he sincerely hoped the brotherly feeling which had been created between the British and American people during the war, would be perpetuated. The proper feeling, he pointed out, can only be secured by close co-operation between important British and American technical societies and business organizations, such as the American Foundrymen's association and the British Foundrymen's association. In responding, Mr. Backert expressed his appreciation of the unusual cordiality of his reception, which, he said, was a compliment primarily to the American foundry industry. He hoped, he said, that the day might soon come when the American Foundrymen's association could reciprocate in kind. The speaker also laid stress on the wonderful achievements of Great Britain during the war, particularly in the castings field. The dinner at Coventry was followed by a general meeting of the Coventry branch of the British Foundrymen's association.

National Meeting at Sheffield

A general meeting of the British Foundrymen's association, at which members from all parts of the country were present, was held at Sheffield on Saturday, May 3. It was presided over by Thomas H. Firth, Wicker Iron Works, Sheffield, president of the British Foundrymen's association. The following guests were present: T. H. Firth, president, B. F. A.; Alderman W. Irons, J. P., lord mayor of Sheffield; Prof. W. Ripper, J. P., M. I. C. E., vice chancellor of Sheffield university; Capt. Mark Rundle, D. S. O., R. N.; Prof. W. G. Fearnside, M. A., Sorby professor of geology, Sheffield university; Maj. D. Gordon, R. A. F.; Capt. A. Hayes, R. A. F., general secretary, B. F. A.; W. Clarke; P. B. Brown, M. I. C. E.; P. Crosbie; J. H. Savage; A. S. Capron; J. M. Allan; C. E. Siddall; H. C. Else; A. Senior; F. J. Crowley; H. Newbould; J. Little; J. G. Crowthere, past president, Sheffield branch, B. F. A.; T. W. Willis, president, Sheffield Society of Engineers and Metallurgists; W. Mayer, past president, B. F. A.; F. W. Finch, founder and treasurer, B. F. A.; J. D. Carmichael, president, Newcastle branch, B. F. A.; F. J. Cook, past president, B. F. A.; J. Shaw, past president, Birmingham branch, B. F. A.; H. L. Reason; J. G. Robinson; A. Whiteley, secretary, Sheffield branch, B. F. A.; Dr. P. Longmuir, past president, B. F. A.; Dr. W. H. Hatfield, president, Sheffield branch, B. F. A.; J. Watson; J. Ellis, past president, B. F. A.; and A. O. Backert.

Mr. Firth in introducing the guest of the evening, pointed out that the British Foundrymen's association, although founded only in 1903, now has 1600 members and is, therefore, the largest foundrymen's association in the world. In responding, Mr. Backert referred again to the unusual warmth of his reception. He also sketched the foundry development of the United States and made a few remarks on the labor situation.

The final welcoming function tendered the president of the American Foundrymen's association was held at Birmingham, Monday evening, May 5. Dinner was served at the Queen's hotel, after which a general meeting was held at Birmingham university. Prof. Thomas Turner, Birmingham university, presided.

At the general meeting at Birmingham university, Professor Turner pointed out the necessity for closer international co-operation along technical and scientific lines. A brief discussion of the qualities of malleable iron also took place. It was stated by Mr. Cook that the tensile strength of malleable castings made in British foundries averages nearly 60,000 pounds per square inch, these figures comparing unusually favorably with the results obtained in American foundries. In his concluding address at Birmingham, Mr. Backert again expressed his appreciation of the warmth of British hospitality and his belief in the necessity for fostering closer relations between the productive industries of the United States and the mother country.

Educate Worker, French Iron Master Urges

BY FRANCIS MILTOUN

Paris Correspondent of The Iron Trade Review

THE famous Schneider-Creusot works in mid-France is one of the greatest employers of labor in the country. Like all large scale enterprises of its class it has to deal with the labor problem in all its phases, and the phases are more numerous today than ever before.

The 8-hour law has come into effect in France and three *equipes*, or shifts, are now necessary, where two served before. The French laborer during the war was remarkably tolerant, and the few ebulitions of spirit died down of their own lack of insistence. The Creusot works were remarkably free from demonstrations. This speaks much for the system under which the ideas of Eugene Schneider were put in effect.

Monsieur Schneider was present at the celebration of the fiftieth anniversary of the Iron and Steel institute in London recently. On his return from England he gave out the following interview:

"From whatever side we approach the great social question of capital and labor we get the same response. The communistic dream leads to degradation and the progressive extinction of the flame of life. But we should be tolerant of an indispensable discrimination and adopt a directive effort in comport with the changing conditions of the times. These should be our guides. The best of the methods is that which is arrived at by experience.

"The *liaison* necessary between the mass of workmen and their employers can not possibly be assured without the two distinct elements pursuing their education along parallel lines. The future chiefs of industry should come to know their subordinates intimately, and the workmen should be educated along lines which will give them the capacity to judge their employers and their methods other than by mere hearsay. The two categories of world workers should leave no stone unturned to come to a mutual realiziation of each other's aims, and consequently should have reciprocal confidence in each other.

"But how many of our compatriots have learned the vagaries of the human soul, the psychology of the masses? Our military chiefs owe a very considerable part of their success to their competence in the psychology of the soldier, for the reason that this is taught in the military schools where they had their first instruction in the arts of war. This should serve as an example to our future captains of industry.

"To achieve the desired result there is but one direct method. First our young engineers should add to their study program an effective sojourn in the workshop as simple workmen. It will be necessary also that they recognize in this an advantage which must never be lost to view in the future; this alone will enable them to have that much-to-be-desired 'contact' with their workmen when they become directors. Their orders to their subordinates will thus be of a nature which will smooth difficulties which are bound to come up continually.

Tact Needed in Management

"Above all this method will endow them with that tact and understanding which more than ever will be demanded in the conduct of a big manufacturing plant. The workman is naturally suspicious of his superiors, particularly as this applies to production methods; thus *mefiance* will be surmounted and the workers' sympathies won.

"All difficulties may be surmounted by an intelligently applied method; the intelligent man is one described by Pascal as one endowed with the spirit of tact and *finesse*. This is more of a necessity to our future chiefs of industry than their whole baggage of scientific learning. Largely is this so by reason of the fact that the workmen of western Europe possess natural qualities which enable them to appreciate their chiefs who are worthy of such confidence, and they will willingly offer their skill and their ingeniousness for the judgment of one higher up if they can be made to feel that it will be appreciated.

"Reciprocally, the engineer of the future has much to learn from the workman in the shops. These are often better practicians than the professional physicians. Above all our young engineers should learn to know the ideas of the workmen *au fond*, to see their errors and interpret the views of the two classes. Then great progress will have been made, a great step toward producing harmony in the world."

Reorganize to Promote Standardization

THE American Engineering Standards committee has just completed and adopted a revision of its constitution which has been sent to the governing boards of all the departments and societies represented on the committee with a request for its ratification. The new constitution changes the name to the American Engineering Standards association. The objects of the association are to unify and simplify the methods of arriving at engineering standards; to secure co-operation between various organizations; to prevent duplication of standardization work; to promulgate rules for the development and adoption of standards; to receive and pass upon recommendations for standards but not to initiate, define or develop the details of any particular standard; to act as a means of intercommunication between organizations and individuals interested in the problems of standardization; to give an international status to approved American engineering standards; and to promote international standardization.

Any organization may request the association to approve standards which it has formulated or to approve committees that it has appointed and by so doing becomes a "sponsor" society. Such a request is entirely at the option of the organization that has formulated or expects to formulate the standard. At the request of the "sponsor," approval of the standards is given when they are the substantially unanimous conclusions of a committee made up according to the nature of the standard. Committees dealing with standards of a commercial character, such as specifications, shop practices, etc., shall be made up of representatives of producers, consumers and general interests, no one of these interests to form a majority. A consumer is defined as a person, or the representative of a firm or corporation, that uses the commodity involved, but is not directly concerned with its production.

The approval of the association may be given in one of three ways, as "Recommended Practice," "Tentative Standard," or "Standard," the expectation being that nothing will be approved as standard until it is shown that it is generally acceptable.

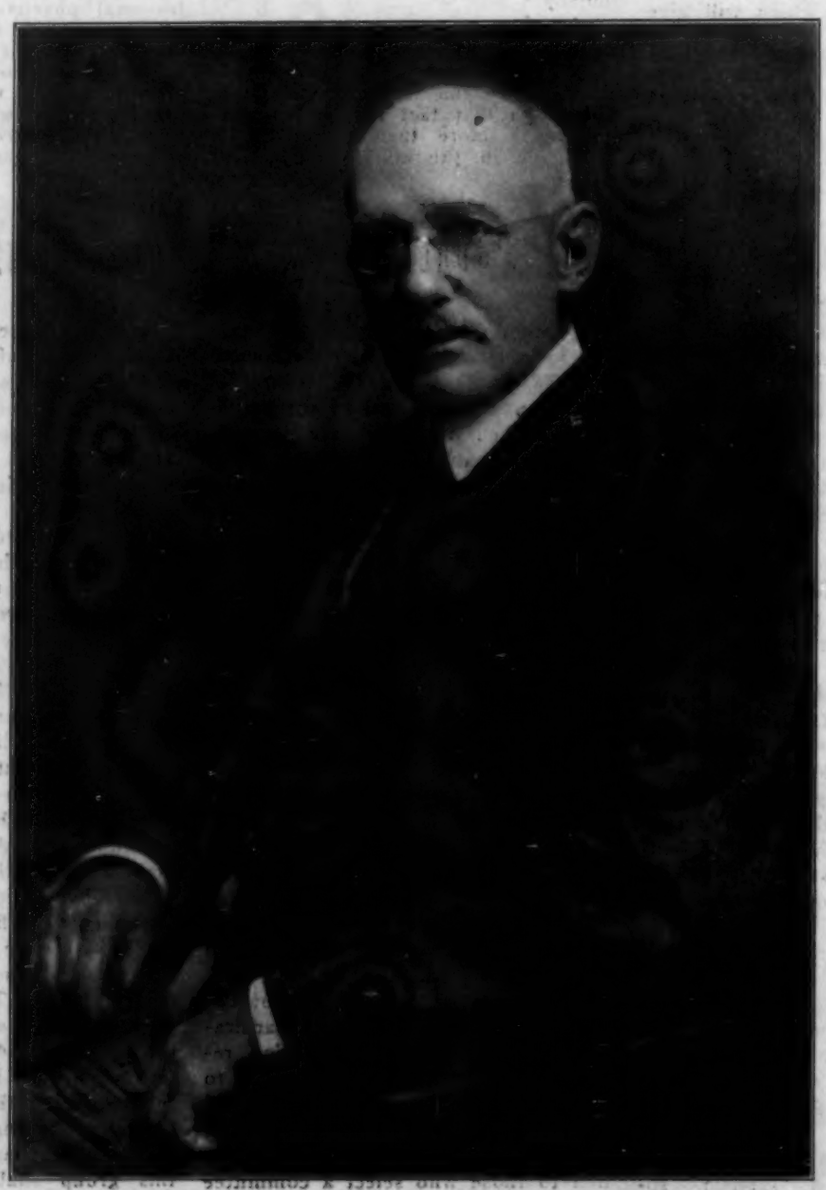
The association will act as a bureau of information regarding standardization. It will collect information regarding existing standards and as to the bodies that have formulated and adopted them. This will enable it promptly to give necessary information to those who select a committee to formulate a new standard or to revise an old one. It will also enable it to furnish information desired by the working committee regarding what has been or is being done on similar or related lines. It will establish relations with similar bodies in other countries and can do much to promote the acceptance of international standards.

In the past there have been many occasions when two or more organizations have formulated standards for substantially the same thing. Often these differences have been very slight but neither has been quite acceptable to the other party. In the majority of such cases, if these organizations had been brought together at the start they could have agreed on a standard that would have been satisfactory to both. The American Engineering Standards association will furnish a means by which any organization intending to define its standards can readily ascertain what others are interested and should be consulted in regard to it. The association provides definte machinery for securing co-operation and preventing duplication of work. It establishes definite rules securing the absolute autonomy of any group engaged in the development of standards and insures that this group shall receive due credit for its work.

Fifty Years of Steel Service

A. H. Cordery, General Sales Manager, Phoenix Iron Co., Rounds Out Career Spanning Remarkable Progress of Industry

A. H. CORDERY, general sales manager of the Phoenix Iron Co., Phoenixville, Pa., completed his fiftieth year in the service of that company recently. Having become proficient in the art of telegraphy at a school established by a firm of contracting engineers who built and equipped private lines, Mr. Cordery first began his connection with the Phoenix Iron Co. when a line was built between the works at Phoenixville and the Philadelphia office of the company. It was not long before he took over other duties in addition to his work as telegrapher, and in a few years he became bar iron clerk, bars then having become the principal product of the company. During his long experience, dating from that time, Mr. Cordery has witnessed the gradual development of modern methods in the steel industry. When he first went with the Phoenix Iron Co., traveling salesmen were unknown, as were many other practices. In 1881 he started to visit the trade as the first traveling man sent out by the company. Incidentally he was one of the first traveling salesmen sent out by any steel company in the country. His visits at the plants of consumers in those days were so unusual as to be an event and in nearly all cases his customers signalized the occasion by going to some trouble to get specifications together, so that he might take back an order. Traveling in those days was entirely devoid of luxury and often involved considerable hardship, since hotel proprietors at that time did not enjoy the patronage which enabled them to make their guests comfortable and well served. Diners on railroad trains were unknown and most meals enroute were taken at railroad stations, the usual method was to hold up the train for a few minutes in order to give the passengers time to bolt their meals. When Mr. Cordery first began his connection with the steel business and for many years thereafter, typewriters had not been invented and all letters were written by hand. Mr. Cordery recalls the adoption of postal cards in the early eighties for facilitating written communication. One of the first postal-card inquiries he received was from the Putnam Machine Co., Fitchburg, Mass., asking prices on bars. Not expecting anything unusual, he sent back a postal card in reply, naming a price which he considered fair for the small tonnage that he thought might be forthcoming. His surprise was great, therefore, when he received in reply still another postal card placing an order at this price for 340 tons, which in those days was considered an enormous quantity. In 1881, Mr. Cordery was given charge of the bar and ship shape order books of the Phoenix Iron Co. In 1892 he was given general oversight of all business going through its Philadelphia office, with the title of sales agent. In 1903 he was made general sales agent, having charge of all sales both of plain and fabricated material. In 1907 he was given his present title.



A. H. CORDERY

Heavy Demand in British Markets

Buying Movement in Pig Iron Under Way, Midland Makers Having Sold Output Two Months Ahead—Boom Period Expected in Semifinished Material—Shipbuilding Especially Active—Scrap Imported from America

Bureau of THE IRON TRADE REVIEW,
Prince's Chambers, Corporation St.,
Birmingham, Eng., May 26, 1919.

A BUYING movement has begun in the pig iron market, the chief concern of consumers now being to secure supplies. The general feeling seems to be one of satisfaction that they have not fared worse in the matter of prices. All idea of a reduction has disappeared.

A significant development relates to the conditional clause introduced by the Derbyshire makers, by which they required purchasers to increase payment *pro rata* in the event of any addition to the cost of prodouction due to higher wages, shorter hours, more expensive ore or increased railway rates. No price arrangement has provoked keener hostility than this, and no other district has adopted it.

Derbyshire makers took the precaution to quote an additional 10s ($2.40) to customers objecting to the clause and without hesitation all their customers elected to pay the higher price. This is probably the last that will be heard of any such attempt to pass trading risks on to the customer. The pig iron maker, of course, still retains his right to increase prices in a strong market, and there will be no hesitation in doing this.

In the Midland district furnaces have sold their prospective output for two months ahead. The demand is such that consumers are far more concerned about getting their material than as to the price they will be called upon to pay, and nobody doubts that the next movement will be upward.

A similar state of affairs prevails in regard to hematite, for which there is a great demand. In regard to West Coast material it is pointed out that prices of bessemer mixed numbers are still 10s ($2.40) below those of the record year of 1873, following the Franco-German war, but that record was followed by a tremendous relapse, prices falling within 12 months to about four guineas ($20.16) per ton. Nothing of this kind can now happen, if for no other reason than the strong position of labor. All the furnaces in that district are booked well ahead. The chief trouble of the trade there is the inability to obtain sufficient ore, and this may lead to furnaces being put out of blast, a most anomalous state of affairs in view of the great demand for steelmaking iron. There is a strong and improving demand for export, but it is impossible to furnish the requisite amount of iron.

Now that government control is removed, the government itself is showing little hesitation in appearing in the market as a competitor in the sale of finished iron and steel. Scrap dealers repeatedly find themselves in competition with lots of broken machinery and other material from dismantled war factories. There is an excellent demand for this material in view of the scarcity of pig iron. A decided novelty was the purchase by a large Sheffield firm of a quantity of American shell steel for melting up in British open-hearth furnaces. It is understood that the American government has 750,000 tons of this material, and in view of the wide divergence between British and American scrap prices such transactions promise to be profitable.

Expect Boom in Market

The general tone of the market has become confident, no doubt partly because of the improved European situation Optimism appears to be emerging now that peace is in sight, and far-seeing traders expect a boom period.

Export trade has not become a very noticeable feature, but the figures show some improvement. The exports of steel bars, angles, shapes, rods and sections for April totaled 18,762 tons, or an increase of 7000 tons. It is noteworthy that France is an exception to the general increase among our foreign buyers, purchases for the year declining from 10,000 tons to 3954 tons, while two years ago the quantity was 23,000 tons. The most encouraging feature relates to galvanized sheets, this item having increased in a year from 1613 tons to 13,244, while steel plates have increased from 8000 tons to 20,000 tons.

It seems probable that Glasgow will gradually increase its exports, as makers are getting many inquiries for material for shipment, although for the present they are giving preference to home users. Despite numerous rumors it is evident that in regard to imports there is good deal more smoke than fire. The amount of pig iron imported is believed to be the smallest on record, namely, 2533 tons, compared with 15,351 tons a year ago, including 1000 tons of basic iron from America and 1300 tons of Swedish foundry. The imports of semifinished steel were only 289 tons. There is a sign of revival in the amount of iron ore imported, which seems to suggest a return to normal conditions.

There is a better tone in the market for tin plate, new inquiries including a large order for 30,000 boxes, while Spain has big inquiry in the market.

The Swansea makers immitated the Midland blast furnaces in striving to include in forward contracts a clause binding the purchaser to raise the price to cover any advance in wages conceded by the joint industrial council which is to meet May 30. The buyers in Wales, however, were just as hostile as those in Birmingham, and the move was abandoned.

Orders for wrought iron still are being placed, but buying is restricted owing to the impossibility of getting orders filled. Owing to the scarcity of puddlers and the general effect of the 8-hour system any expansion of the wrought-iron trade appears to be impossible. Apparently, the Black Country trade will have to be reconstructed before it can rise to the opportunity furnished by the large demand. Among the new prices which have provoked criticism is that of billets. Semifinished steel which before the war could be bought at £4 15s (22.80) to £5 ($24.00) per ton now costs £14 10s (69.60) and £15 ($22).

The busiest branch of the steel trade is that devoted to the supply of shipbuilders, ship plates and heavy forgings for marine requirements still being demanded in good quantities, with prospects of increasing requirements in the future. At the same time shipbuilding contracts have been keenly scrutinized in view of the fact that shipping values may be reduced considerably within the next year or two.

The iron and steel trades are very much interested in a bill promoted by the labor party entitled the "Checkweighing in various industries bill." It has passed its second reading. The object of the measure is to apply to various industries, particularly iron and steel, the checkweighing system which has been in operation in the coal trades many years.

As showing that the steel industry still is profitable, the directors of the Parkgate Iron & Steel Co. have recommended a final dividend of 2s (48 cents) per share free of income tax, making 3s 3d (78 cents) per share for the year ending March 31, equivalent to 16¼ per cent. The dividends for the previous two years were 15 per cent.

Here and There in Industry

Live Information Which Records the Expansion of Various Lines of Productive Enterprise

ONE hundred years in the hardware business are to be celebrated by the Peck, Stow & Wilcox Co., New York, Cleveland and Southington, Conn., at the latter city, Aug. 29 and 30, 1919. Started in 1819 with Seth Peck's invention of a tin-folding machine, the business has grown steadily until now it embraces the manufacture of mechanics' hand tools, tinsmiths' and sheet metalworkers' tools and machines, and general hardware. One of the features of the 2-day celebration will be the exhibitions of the company's tools of every description in the new plant addition at Southington. This will show the earliest samples of tools made by the company, some being 100 years old. Many of these already are assembled and additions to the collection are being made from time to time. Different models will show the development of the tools. At this time, the company will present to the city of Southington a soldier memorial, consisting of a flag pole with a bronze and stone base, on which the names of Southington's soldiers of the war recently ended, the Spanish-American, Civil, Mexican and Revolutionary wars, and the war of 1812, will be cast in bronze. The principal speakers scheduled to appear at the presentation are Secretary of War Newton D. Baker, Governor James M. Cox of Ohio and Governor Holcomb of Connecticut.

* * *

DAVID E. TRACY, president of the Harrisburg Pipe & Pipe-Bending Co., Harrisburg, Pa., who recently purchased at public auction the plant of the Municipal Shale Brick & Block Co., located near Martinsburg, W. Va., advises that the purchase is entirely a personal one and that he has no definite plans with regard to the plant at present.

* * *

NEGOTIATIONS which have been pending for several weeks, finally have been consummated, which will bring about the moving of the Allen Motor Co.'s four plants from Fostoria and one from Bucyrus, O., to Columbus, O. They are to be operated there on a larger scale. In 1916, 5000 cars were built by the company, representing a maximum output. When all arrangements have been made at Columbus and all equipment installed, it is planned to produce 20,000 cars annually. The company has increased its capitalization to $3,000,000; the Scioto Rubber Co. is absorbed in the deal and the plant formerly used by the Columbus Buggy Co., is to be occupied by the Allen factories.

* * *

PRELIMINARY plans for the establishment of one of the largest automobile plants in the world, have been announced by C. Harold Wills and John R. Lee, lately of the management of the Ford Motor Co., Detroit. This plant, will be the center of a model city, on the St. Clair river near Port Huron, Mich. Associated with them in the enterprise are other prominent automobile men. The plant site is said to comprise about 2000 acres of land.

* * *

PNEUMATIC chipping hammers, one-piece long-stroke riveting hammers and electric drills in operation were exhibited by the Independent Pneumatic Tool Co., Chicago, at the Boiler Makers Supply Men's association convention held at the Hotel Sherman, Chicago, May 26 to 29. R. S. Cooper, vice president of the company, was in charge, assisted by Harry F. Finney, manager of the Pittsburgh branch, and F. J. Passino, J. G. Cowell, E. F. Bertrand and William Mercer, of the Chicago office.

* * *

THREE acres are to be purchased by the Walden-Worcester, Inc., Worcester, Mass., maker of wrenches, on Shrewsbury street in that city. On a portion of the property it will build a brick, mill construction, 1-story, 56 x 400-foot factory, which will give it 110,000 square feet of floor space. At present the business is scattered in several buildings with the main factory at 72 Commercial street, all of which it leases, while with a new factory of its own it will be concentrated under one roof.

* * *

ON a 14-acre site, purchased from the Pullman Land association, the Iron Mountain Co., 927 East Ninety-fifth street, Chicago, is erecting a modern fireproof machine shop, 110 x 400 feet, and boiler house, 30 x 44 feet. Present construction represents the first unit of an extensive manufacturing plant. A gray iron foundry is contemplated and plans now are under way. The company will design and build a heavy-duty oil engine, embodying the Hvid principle, for the utilization of low grade cheap fuels. Operations on a production basis are expected to be well under way early in the fall.

* * *

ORGANIZATION of the Rochester Forge, Inc., Rochester, N. Y., has been effected and the company expects to engage in active business about Aug. 1. The company will manufacture steam hammer forgings in all grades of materials in a variety of shapes, such as rings, disks, spindle forgings, shafts, blocks and bars up to one ton. As yet the company has not announced the names of its officers, but they are understood to be men of wide experience in the forging business and well known in steel circles. Erection of a plant for the company has been started and machinery and equipment purchased. Announcement of the organization of the company was made through E. E. Guntert, 510 Cutler building, Rochester, N. Y.

* * *

FOR the purpose of manufacturing and selling safety devices, the Cleveland Safety Device Co., Cleveland, recently was incorporated under the laws of Ohio and temporary quarters have been established at 1791 East Thirty-eighth street, corner of Kelley avenue. At present, however, the manufacturing operations will be accomplished elsewhere. Patented safety window locks and time switches now are being marketed. The capitalization is $125,000 each common and preferred, most of which has been subscribed. The officers follow: President, Joseph Schindler, president, Federal Box Co.; vice president, J. B. Coffinberry, president, Gardner Realty Co.; secretary, J. S. Grant, packing products broker, 816 Hippodrome building, all of Cleveland; and treasurer, W. J. Colborn, president, the Red Ash Coal Co., Raven, Va. The officers with Albert Kroehle, president, Adam Kroehle's Sons Co., Cleveland, comprise the board of directors.

Here and There in Industry

Live Information Which Records the Expansion of Various Lines of Productive Enterprise

CONTROL in the New York Iron Roofing & Corrugating Co., Jersey City, N. J., and Penn Metal Ceiling & Roofing Co., Philadelphia, has been purchased by George A. Sagendorph, president of the Penn Metal Co., Boston. Hereafter, while the three companies will operate their factories under their respective titles, the departments of finance, purchase and sales will be unified and directed by the Penn Metal Co., 65 Franklin street. The name of the Jersey City company will be changed to the Penn Metal Co., Inc., and its factory will be used largely for the export trade. The Philadelphia company will henceforth be the Penn Metal Co., Ltd.

* * *

ORGANIZED to consolidate the steel departments of the Arthur J. Dunkle Co., 50 Church street, and Francis C. Owen, 25 Church street, New York, the Seacoast Steel Corp., New York, has established offices at 301-302 Havemeyer building, 25 Church street.

* * *

WORK is to start at once on a new gray iron foundry with a 20-ton daily capacity for the Defiance Machine Co., Defiance, O. This foundry is to produce machine tool castings and will be built under a 60-day schedule. Clement A. Harvey, Railway Exchange building, Chicago, is the engineer in charge.

* * *

IN response to an inquiry regarding its plans for the manufacture of valves and fittings, the Bethlehem Steel Corp. advises that it has completed plans for the establishment of a standard fitting plant at Redington, Pa. It is planned that the projected plant will occupy one of the Bethlehem Steel Co.'s buildings at Redington which was used during the war in the company's fuse and shell-loading operations.

* * *

STOCK in the Bordentown Steel & Tube Corp., Bordentown, N. J., manufacturer of cold drawn seamless steel tubing, has been acquired by F. N. Beegle, president of the Union Drawn Steel Co., Beaver Falls, Pa., and A. D. Dorman, president of the Steel Sales Corp., Chicago. Mr. Levin's place on the board of directors is to be filled by Mr. Beegle. In addition to Messrs. Beegle and Dorman, the present board of directors of the Bordentown company comprises Julius Blum, president of Julius Blum & Co., New York City, and H. S. White, Bordentown, N. J., president and treasurer of the Bordentown company. V. P. Jackson is secretary of the latter company.

* * *

WITHERBEE, SHERMAN & CO., Inc., 2 Rector street, New York City, now are operating the Cedar Point furnace, known as the Northern stack, at Port Henry, N. Y. This furnace, although owned by Witherbee, Sherman & Co., has been leased and operated by the Northern Iron Co., Port Henry, N. Y., for several years. It recently has been turned back to its owners.

* * *

CONTRACTS recently closed make the General Steel Products Co., 1625 Dime Bank building, Detroit, district representative for the Greer Steel Co., Dover, O., manufacturer of cold rolled strip steel. The General company also represents the Hoosier Rolling Mill Co., Terre Haute, Ind., in the same territory. The latter company manufacturers hot rolled bars, reinforcing bars, structural steel and light rails. Herbert Appleby, A. L. Tushbant and John H. Miles compose the General Steel Products Co.

* * *

COMPOSED of Victor E. Runo, Charles O. Johnson, Nils Bjork, Charles D. Johnson and Bernard A. Johnson, a new partnership has been formed, known as the Worcester Wire Co., 22 Lakewood street, Worcester, Mass., to succeed C. O. Johnson & Sons, makers of steel wire. The Johnsons were affiliated with the latter concern and all five previously were in the employ of the Spencer Wire Co. A new plant, to be ready for occupancy in July, now is being equipped with wire-drawing machinery.

* * *

FOUR batteries of the new by-product plant of the Jones & Laughlin Steel Co., at Hazlewood, Pittsburgh, will be completed about June 15. Work on the fifth battery has not been started yet. It was expected to have the entire plant consisting of five batteries of 60 ovens each completed by May 1, but an accident set the work back. When finished this plant will be the fourth largest of its kind in the world, being exceeded in size only by the Clairton, Pa., plant of the Carnegie Steel Co., the plant of the United States Steel Corp. at Gary, Ind., and that of the Bethlehem Steel Co., at South Bethlehem, Pa. The Jones & Laughlin plant is being constructed by the Koppers Co., Pittsburgh.

* * *

CHARLES E. MILLER, 97 Reade street, New York, dealer in motor car, motor boat, motorcycle and aeronautical supplies, desires to get in touch with manufacturers of and dealers in wire nails, barbed wire, black and galvanized sheets, tin plate, boiler tubes, hoops, rivets, etc., in the interest of one of his customers from Bombay and Arabia. This customer at present is making his headquarters with the Miller company.

* * *

THE Bass Foundry & Machine Co., Ft. Wayne, Ind., owners of the Rock Run charcoal furnace in Cherokee county, Ala., announces that an office will be opened in Birmingham with J. M. Garvin as manager. The furnace is to be improved and enlarged and a big foundry and machine shop erected at a cost of approximately $300,000. At this plant machinery, axles, car wheels, Corliss engines, boilers and other power plant equipment will be manufactured. The company has a capitalization of $1,700,000.

* * *

THE New York Testing Laboratories which have been organized by L. R. Seidell, G. B. Jack Jr. and H. H. Geist, formerly chief metallurgist, assistant chief metallurgist and chief chemist respectively of the Wright-Martin Aircraft Corp., have in addition to their laboratories at 354 Mulberry street, Newark, N. J., opened up their New York offices at 74-80 Washington street. In addition to chemical and physical testing and microphotography, this organization is specializing in the source inspection of materials, and as consultants in smelting, foundry, drop forging and heat treating practices as well as the metallurgical investigation of shop troubles.

Inflation Holds Up Prices

No Marked Decline Soon Says Reserve Board Member—Metal Branch of National Hardware Association Discusses Conditions

DRAWING attention to the fact that it was 1879 before the inflation in money, credits and commodity prices brought about by the Civil war was overcome and that it took an even longer period following the Napoleonic war to restore normal conditions, A. C. Miller of the federal reserve board, who was the principal speaker at the opening session of the eighth annual meeting of the metal branch of the National Hardware association at the William Penn hotel at Pittsburgh, June 6, asserted that it might take equally as long to bring about the readjustment which the recent world war entailed.

"There is less hazard about buying now even at admittedly high prices," said Mr. Miller, "than in pursuing too conservative a course in the matter of purchases, for since it took 14 years to restore the conditions in this country which existed prior to our Civil war and it was not until 1830, or 15 years after Napoleon was defeated, before Europe recovered from the effects of that war, any decline that may come in commodity prices must be so gradual as to be hardly worth consideration. The bugaboo of falling prices really is not to be dreaded.

"The war price situation was highly artificial and highly inflated, but as the causes of the rise in prices still are effective, no marked decline is immediately indicated. High prices are the direct result of government borrowings, for in their efforts to provide themselves with war supplies the various belligerents borrowed freely and the increases in currency and credits produced a condition where the amount of money-seeking goods was greater than the amount of goods-seeking dollars. This condition still exists and until it is corrected through deflation there can be no material decline in commodity prices."

In reviewing the prospects for deflation, the speaker drew attention to the fact that the world had amassed a debt of $235,000,000,000; that England still was spending about $30,000,000 daily in meeting expenses directly produced by the war; that the increase in bank note issues in Europe since 1914 had amounted to $20,000,000,000 and that deflation, because of the impoverished condition of most of the European countries necessarily would be slow. If the deflation was hastened, it would force the repudiation of part of the debt of the various countries and result in possible disaster, for it would entail taxation so burdensome as to foster the unrest already so apparent abroad.

Louis Follet of the Standard Tin Plate Co., Canonsburg, Pa., gave a brief review of the coke tin plate situation, in which he told of the efforts of the manufacturers to improve the quality of their goods by paying less attention to the weight of the coating and giving more to the matter of a good, evenly and well distributed coating. Investigation had developed the fact he said that open-hearth steel was preferable to bessemer and the use of the latter had been largely reduced.

E. T. Sproull of the Trumbull Steel Co., Warren, O., who began the discussion of the galvanized sheet situation, declared that the past two weeks had developed a marked improvement in business and the mills now were running at least 80 per cent of capacity, as compared with 35 per cent a short time ago. He asserted that prices were strong and that a good business was coming out.

At the afternoon session, A. I. Findley, editor of the *Iron Age*, gave an address on "The Effect of the War in Increasing the Iron and Steel Production of the United States, Allied and Enemy Countries." "America increased her production of steel until she was producing three tons for every two tons produced by the rest of the world; it was this American preponderance of production that won the war," declared Mr. Findley. He added that the war had opened up the markets of the world to American steel manufacturers and the destruction of Belgian and French plants had been so great that it would be some time before these nations could return to their former places in the export trade.

That copper was the cheapest commodity on earth was the opinion of Greenville Mellen of the Continuous Rolling Mills, Garwood, N. J., in an interesting address on the copper market. Analyzing the present costs, Mr. Mellen declared that a price of 17 cents a pound for the metal today was equal to less than 7 cents five years ago and that in relation to other commodities, copper was 10 cents per pound below its commodity value. Producers not only were depleting assets by every pound of copper ore taken from the mines, but also had to contend with wages 200 per cent higher than before the war. The average price of copper for the past 30 years was 15½ cents per pound, which according to the speaker, was just about the present cost of producing copper today. He could not see how prices could help moving higher in view of that fact and the big shortage of the metal which must exist abroad.

Discussion of "Destructive Competition," led by J. George Fuchs, of Bruce & Cook, New York City; "The Necessity for Continuing the Differentials for Warehouse Shipments that Prevailed During the War," led by F. J. McNeive, of W. F. Potts Son & Co., Inc., Philadelphia; "Should the Mills Extend the Same Consideration to the Consumer Who Purchases One Carload a Year as They Do to the Wholesale Distributors Purchasing Twenty to One Hundred Carloads?" led by F. L. Greely of the Herrick Co., Boston; "The Proper Method of Figuring Selling Prices," led by Harry L. Doten of Austin & Doten, Boston and "The Service Performed by the Wholesale Distributors," led by Richard J. Smith of Carter, Donlevy & Co., Philadelphia, took up the remainder of the afternon session.

Out of the discussion of destructive competition and the warehouse differentials came a resolution asking for the appointment of committee of the metal branch to confer with the sheet manufacturers for the purpose of arriving at a clearer definition of who among distributors were entitled to the carload price. At a dinner-smoker Friday evening, James F. Conran of the Standard Sanitary Mfg. Co., Pittsburgh, talked on "Trade Extension," and "Looking Backward," was the theme of George P. Early of the American Sheet & Tin Plate Co., Pittsburgh. Various subjects of interest to the organization were discussed at Saturday's session, which concluded the meeting.

Will Build Sheet Mill

A new sheet mill, which will cost approximately $1,500,000, will be built by the Falcon Steel Co., Niles, O. The plant will be erected on a 100-acre tract located in the northeastern part of the city and will include eight mills. The incorporators, Lloyd Booth, Paul Wick, C. H. Booth and J. T. Harrington, were formerly associated with the Trumbull Steel Co., Warren, O.

The Victor Steel Co., which was recently incorporated for $50,000, will build a rolling mill at Warren, O., for rerolling scrap steel and second quality steel from Mahoning valley mills.

F. K. Brewster of the Aetna Explosives Co., New York, and John A. Bocklet, Dayton, O., representative, announce that the Aetna Explosives Co. near Xenia, O., Greene county, will not resume operations and that the site and buildings will be offered for sale.

Men of the Iron Trade

Personal News of a Business Character Regarding the Men of Affairs of the Industry

GEORGE W. JONES, who recently assumed his new position as manager of the Chicago office of the Pittsburgh Steel Co., with offices in the McCormick building in that city, has been identified with the company since 1908. For more than five years he has been assistant manager of the company's New York office and last year when the company maintained a Washington office, Mr. Jones was in charge. He was born in Wales, coming to this country when 13 years old, and locating on a farm in northern Pennsylvania. His first position with the Pittsburgh Steel Co. was that of traveling salesman in the farming communities of New York state. He subsequently was made assistant manager of the fence sales department, with headquarters in Pittsburgh and later was transferred to New York. His experiences have given him a wide acquaintance among the hardware and jobbing trade of this country and with exporters and foreign buyers.

T. L. Lewis, general sales manager of the A. M. Byers Co., Pittsburgh, has resigned effective July 1. His successor has not yet been selected.

W. L. O'Connell, who has been in charge of sheet sales for the Watson Bros. Steel Co., Youngstown, O., resigned recently.

L. M. Sawyer, vice president of the Chicago Steel Tape Co., Chicago, has been elected president, succeeding Lewis A. Nichols, deceased.

P. E. Longstreet has been appointed resident manager of the Massey Concrete Products Corp. of Chicago, with headquarters at 925 South Sixth street west, Salt Lake City, Utah.

Philip Wick has been elected vice president of the Ohio Iron & Steel Co., Youngstown, O., to succeed John C. Wick, who held that office for 36 years.

Harry C. Greifzu recently was elected assistant treasurer of the Pulaski Iron Co., Philadelphia. He retains his position as assistant secretary.

Roy A. Mason recently resigned as assistant secretary of the Trumbull Steel Co., to become vice president and general manager of the Victor Steel Co., Warren, O.

A. E. Walker has been appointed sales manager of the Republic Iron & Steel Co., Youngstown, O., to succeed D. J. Geary, who resigned recently.

George A. Fuller has been placed in charge of the newly established

GEORGE W. JONES

office of the Federal Foundry Supply Co., Cleveland, which is located at 760 Book building, Detroit.

F. M. Russell, formerly treasurer of the Union Steel Castings Co., of Boston, has resigned to become New England representative for the Bayonne Steel Castings Co., of Bayonne, N. J.

John L. Grimes recently resigned as advertising manager for the Whitaker-Glessner Co., Wheeling, W. Va., to become identified with the Firestone Tire & Rubber Co., Akron, O., in its advertising department.

Charles F. Morgan recently was made vice president and assistant treasurer of the Morgan Spring Co., Worcester, Mass. While some time ago, he was active in the management of the business the last few years he has been treasurer of the Norcross Bros. Co., building contractor, remaining as secretary of the Morgan company.

John De Wolf, formerly eastern sales representative of the Liberty Steel Co., Warren, O., has become associated with the Trumbull Steel Co., Warren, O. His headquarters are in the company's New York office, Grand Terminal building.

C. A. Truesdale has been elected president of the Hill & Griffith Co., Cincinnati, succeeding David T. Richards who died recently. Mr. Truesdale is succeeded as secretary by E. M. Lewis who was formerly sales manager.

W. M. Carty formerly assistant superintendent of the American Brake Shoe & Foundry Co., Chicago plant, has accepted the position of superintendent at the Pine Bluff, Ark., plant of the Standard Brake Shoe & Foundry Co.

L. J. Voyer, formerly general sales manager of the Liberty Steel Co., Warren, O., has been made secretary and general manager of sales of the Ohio Corrugating Co., Warren, O. He succeeds W. P. Reed, who resigned May 1.

D. E. Sawyer, formerly connected with the Illinois Steel Co., and later assistant steel director of purchases of the war industries board, has become general manager of sales of the Pollak Steel Co., Cincinnati, O., with headquarters at 120 Broadway, New York, effective July 1.

F. N. Beegle, president of the Union Drawn Steel Co., Beaver Falls, Pa., and connected with that company for many years, recently was elected a director of the Bordentown Steel & Tube Corp., Bordentown, N. J., to fill the vacancy caused by the resignation of Isaac Levin.

E. A. MacDonald, who recently resigned his position as assistant secretary of the Savage Arms Corp., Sharon, Pa., to become secretary, treasurer and a director of the Standard Tank Car Co., Sharon, Pa., recently was tendered a farewell reception by employes of the former corporation, who presented him with a Masonic emblem ring. J. D. Lannon, superintendent of the Sharon plant of the Savage Arms Corp., made the presentation.

Men of the Iron Trade

Personal News of a Business Character Regarding the Men of Affairs of the Industry

EDWIN H. RIDGWAY, for the past 12 years purchasing agent of the Colonial Steel Co. of Pittsburgh, has resigned that position, effective June 1, to accept a similar position with the Struthers Furnace Co., Cleveland. Mr. Ridgway has been connected with the Colonial Steel Co. for 15 years, having served in various capacities at the company's mill for about three years before assuming his duties as purchasing agent. Prior to becoming identified with the Colonial Steel Co., he was connected with Boyd, Stickney & Co., Harrisburg, Pa., purveyors of hard coal for the Pennsylvania Railroad Co.

Ben M. Trautman has been appointed purchasing agent of the Colonial Steel Co., Pittsburgh, effective June 1, succeeding Edwin H. Ridgway who leaves the company to go with the Struthers Furnace Co., Cleveland. Mr. Trautman, who has been with the Colonial Steel Co. for about 10 years, has recently been in charge of the cost department of that company. He has served in various capacities with the Pressed Steel Car Co., Pittsburgh, for about 13 years prior to becoming connected with the Colonial Steel Co.

Jay L. Hench has been made Chicago district sales manager for the Lackawanna Steel Co., Buffalo, to succeed A. P. Van Schaick, resigned. Mr. Hench has been associated in the Chicago office for some time.

George W. Scott, formerly representative at Chicago of the Pittsburgh Steel Co., has been made district manager of sales in Chicago for the Stark Rolling Mill Co., Canton, O., with headquarters at 1119 Marquette building.

Charles F. O'Hagan, formerly chief engineer of the Wm. B. Scaife & Sons Co., manufacturer of steel tanks, etc., Pittsburgh, has been made resident engineer and manager of the Chicago sales and engineering office, just established by the company at 38 South Dearborn street.

Ira M. Smith, who has just returned from France, now is resident manager of the Thomas D. Prosser Co., Wheeling, W. Va., since the company's main office was removed, June 1, from Wheeling to Wooster, O. He also is secretary of the company which handles pig iron, billets, rails, bars, plates, structural shapes, etc.

Edwin T. Jackman, formerly of E. S. Jackman & Co., Chicago, returned recently from Sheffield, Eng., where he had been investigating methods in connection with tool and alloy steels. Effective July 1, Mr. Jackman will be manager of the Boston office of the Firth-Sterling Steel Co., McKeesport, Pa.

J. U. Anderson has been made treasurer of the Trumbull Steel Co., Warren, O., to succeed Lloyd Booth, resigned. He formerly was assistant to the president, having served as assistant treasurer for some time previously. William M. McFate, formerly secretary of the company, has been made a vice president and has been succeeded by A. L. Button.

D. P. Lamoreaux, formerly president and general manager of the Beaver Dam Malleable Iron Co., Beaver Dam, Wis., has been appointed vice president in charge of sales of the Canadian Car & Foundry Co., the Canadian Steel Foundries and the Pratt & Letchworth Co., Ltd., with headquarters in the Transportation building, Montreal.

Aaron Rachofsky has severed his connection with the war department news bureau at Washington and resumed his private work as adviser on public relations at 61 Broadway, New York City. In the course of his duties with the war department news bureau, Mr. Rachofsky has taken a statements of instruction and interest prominent part in preparing publicity to the iron and steel and other trades.

J. E. Morgan has been made general sales manager of the Eastern Refractories Co., 438 Commercial Trust building, Philadelphia. He formerly was with the Harbison-Walker Refractories Co. for 17 years and the last eight he has been district sales manager for the Harbison-Walker company at Philadelphia. W. H. Kelly, who has been special representative for the Harbison-Walker company for the last eight years, resigned recently to become affiliated with the Eastern company as sales manager at Pittsburgh, with offices at 1214 Bessemer building. J. W. Dowling, who has represented the Harbison-Walker company in the Youngstown valley district for 10 years, resigned to accept the position of Philadelphia district sales manager for the Eastern company, with headquarters at 1214 Bessemer building, Pittsburgh.

B. F. Faunce, superintendent of the forge and wheel department and L. R. Custer, superintendent of the armor plate department of the Homestead works of the Carnegie Steel Co., have resigned to accept similar positions with the Midvale Steel & Ordnance Co. L. J. Holman has been named to succeed Mr. Custer in the armor plate department and Mr. Holman's place has been filled by Ralph Mills.

N. W. Porter resigned recently as purchasing agent for the Standard Oil Co. of New Jersey and its associated companies, here and abroad. This action was made necessary by ill health and comes at the end of a service extending back 33 years. He has been succeeded by W. N. Cottrell, who has been with the company 17 years and who was associated with Mr. Porter up to the time of the latter's retirement.

C. E. Middleton resigned recently as vice president of the Penn Seaboard Steel Corp., 1417 Samson street, Philadelphia, and is taking a needed rest in California. He expects to return to the East later. W. Benton Keller likewise resigned as sales manager to become a member of the firm of Saunders Killer & Co., Crozier building, Philadelphia. Craig Adair, second vice president, in charge of steel castings, now is in charge of sales, succeeding Mr. Keller.

Arthur M. Long has been promoted to be assistant general manager of sales of the Trumbull Steel Co., Warren, O., to succeed Paul Wick, resigned, effective June 1. Mr. Long was associated with the Jones & Laughlin Steel Co., Pittsburgh, inits Chicago sales office for a number of years until November, 1917, when he joined the sales organization of the Trumbull company. Lieut. Clyde E. T. Tousley has returned to the Trumbull company's Warren office and has been placed in charge of sales extension. Lieut. Tousley saw extended service in France and Belgium.

Men of the Machinery Trade

Personal News of a Business Character Regarding the Men of Affairs of the Industry

F W. McINTYRE who for the past 16 years has been connected with the Niles-Bement-Pond Co., Boston and Chicago, tool manufacturer, has been appointed sales manager for the Becker Milling Machine Co., Hyde Park, Mass., near Boston. He took up his new duties June 1.

Edward Walters, sales engineer for the American Steel Foundries, Chicago, has resigned that position and associated himself with the Keyoke Railway Equipment Co., Chicago.

E. W. Wyatt has returned to Pittsburgh after a year spent at the Davenport Locomotive Works, Davenport, Iowa, as government representative of the Pittsburgh Testing Works.

Raymond G. Lambe, formerly of the Ford Motor Co. purchasing staff, has been made general manager of the Detroit Reamer Salvage Co., Detroit.

James N. Heald, treasurer and general manager of the Heald Machine Co., Worcester, Mass., who has been confined to his home for several weeks by a nervous breakdown, has recovered, and has resumed his duties.

W. A. Booth resigned recently as secretary of the Manufacturers' association, Pontiac, Mich., to take charge of the employment department of the Wilson Foundry & Machine Co., that city.

Charles A. Green has been placed in charge of the recently opened office at 549 West Washington street, Chicago, of the Bordon Co., Warren, O., manufacturer of die cutters and die stocks.

John T. Mahoney, purchasing agent of the Buda Co., Harvey, Ill., has been made sales manager of the truck and tractor engine department, succeeding Lon R. Smith, who has recently become general sales manager of the Midwest Engine Co., Indianapolis.

J. W. Spensley, who has had several years experience as crane sales engineer, with J. N. Kinney, contracting engineer, 30 Church street, New York City, now represents the Champion Engineering Co., Kenton, O., manufacturer of cranes, in its New York territory, with headquarters at 1001 Singer building, 149 Broadway, New York City.

E. P. Houghton, Sydney, Australia, sales agent for the Norton Co., Worcester, Mass., in Australia, is visiting the home office to confer with the sales officials regarding further extension of the company's business in Australia and New Zealand.

R. A. Parks, formerly representative in Cincinnati, O., for William Jessops, Sons, Ltd., Sheffield, England, now is affiliated with the Cleveland office of Manning, Maxwell & Moore, Inc., New York, dealers in cranes, machine tools, etc., as northwestern Ohio representative.

Harry F. Keegan, formerly with the Chicago surface lines who is well known in electric railway fields, has been appointed manager of the recently established branch at 1241 First National bank building, Chicago, of the Van Dorn & Dutton Co., Cleveland, manufacturer of gears, etc. His brother, John Keegan, has been made manager of the new office at 317-30 Church street, New York City. He formerly was with the Interboro railway.

J. W. McCabe, who until recently served the Chicago Pneumatic Tool Co., Chicago, as district manager of sales at Buffalo, has been appointed special representative for that company's foreign trade department. He will leave shortly for an extended tour throughout the Orient, Philippine islands and Australia. W. H. White has been appointed acting district manager of sales at Buffalo and will take charge of that territory during Mr. McCabe's absence.

A. E. Hitchner has been appointed manager of the mining section of the industrial sales department of the Westinghouse Electric & Mfg. Co., with headquarters at East Pittsburgh, Pa. Mr. Hitchner was graduated from Rutger college in 1904. He served a two-year apprenticeship with the Baldwin Locomotive Works, and spent three years with the Link Belt Co. on construction work before joining the Westinghouse sales organization as industrial salesman in the Philadelphia office in 1909. In 1912 he was sent as sales representative to the anthracite coal field and placed in charge of the Wilkes-Barre office. In his new position Mr. Hitchner will handle the sale of all apparatus made by the company for use in the mining industry.

H. L. Garbutt, who for the last six years has been manager of the line material section of the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has been appointed manager of the supply division of the company's San Francisco office. From 1909 to 1913, Mr. Garbutt was in the supply department of the Westinghouse company's Chicago office as line material specialist and prior to that time was affiliated with the Drew Electric & Mfg. Co., Indianapolis. In 1913 he was made manager of the line material section at East Pittsburgh.

Fred C. Horn, formerly shipping clerk at the Ohio Foundry Co. plant at Bucyrus, O., has been made assistant secretary and treasurer of the Carroll Foundry & Machine Co., that city. This appointment comes in a recent organization because it is understood passing of control to the Ohio Crane Co., with C. F. Michael as president succeeding Thomas E. Monks. A. G. Stoltz is secretary and W. H. Picking is theasurer. Formerly Sheldon A. Cary was secretary. and treasurer; F. R. Ambrose, assist- and secretary and Robert S. Carroll assistant treasurer.

Charles H. Stoddard has been appointed consulting marine engineer for the Heine Safety Boiler Co., St. Louis. Mr. Stoddard was born in California and took a technical course at Stanford university. From 1895 until 1900 he was employed in various shops and drafting rooms in the middle west and then returned to the Pacific coast where he entered the drafting department of the Union Iron Works, San Francisco. Later he served as chief engineer for the Fulton Iron Works and the Risdon Iron Works, both of San Francisco. Afterward he was appointed civilian superintendent of shops at the Mare Island navy yard. In January, 1916, he became chief engineer for the Moore & Scott Iron Works which later became the Moore Shipbuilding Co. He left this position to take up his prosent duties.

Federal Joint Labor Council Sought

Representatives of Employers and Employes Will Work Out National Industrial Relationship Plan, if New Jersey Senator's Resolution is Adopted—Marine Labor Conference Fails First Day

WASHINGTON, June 10.—Designed to put in effect a policy which he declares is in successful operation in many industrial concerns in New Jersey, Senator Edge, Republican, of that state, has introduced a joint resolution to create a commission to devise a system of co-operation between employers and employes of the United States.

"Such co-operation and good will between the employing and working elements will be found, I believe, the best antidote for the poison of unrest which runs to such extremity as the deplorable attempt to take the life of Attorney General Palmer, right here in the national capital, and the lives of other eminent persons in other parts of the country," said Senator Edge.

The proposed commission would confer with and study relations between employers and employes. It would determine a policy of counsel and co-operation between these elements throughout the nation and report a plan for a permanent joint council, with representation of these two elements for discussion of any and all subjects of individual and mutual interest to them.

The commission would be composed of eight members, four to be "substantial, representative members of the employing element, and four to be substantial, representative members of the working element." None would be an official or employe of the United States government. The members of the commission would be known as the joint economic commission, appointed by the President of the United States, subject to confirmation by the senate.

No compensation would be paid to members of the commission, but it would be authorized to employ the necessary experts and clerical assistance and would be required to make a report of its findings and recommendations to congress in the session opening in December, 1920. The resolution calls for an appropriation of $25,000 for expenses of the commission, the terms of whose members would expire on March 4, 1921.

Representatives of marine workers' unions and ship operators attending a conference here called by the United States shipping board to establish an industrial council for adjusting labor issues and aiding the American merchant marine, left Washington, convinced that no definite understanding could be reached. The conference convened on June 4 but instead of continuing three days, adjourned on the second day. A resolution passed before the adjournment calls the representatives back on June 23 when the ship owners will present their views on the demands of the workers.

The conference which was opened by Raymond B. Stevens, vice chairman of the shipping board, progressed smoothly until the issue of union preference was raised by the labor delegates and was opposed by the operators. Labor representatives were bitter in their denunciations. They admitted they do not want an industrial board as proposed by the shipping board but prefer to deal with the operators direct. They said they understood that they were to present their demands and have them acted upon at the conference, while the operators understood that the meeting was mainly for the purpose of organizing an industrial council.

Demands of the workers were not made public but were submitted to the operators through the shipping board. Following a stormy session, Mr. Stevens endeavored to bring about an understanding by taking committees representing both sides into a separate conference and going over every point in detail. Operators desired more time to consider the demands of the unions, and it was decided to adjourn the conference.

The operators said they do not seek to lower wage scales but will not agree to large increases.

Dock and harbor workers got together with a committee of operators and adopted two resolutions which will not be reported until the next conference. It is understood they agreed on vital points affecting their relations.

New Wage Scale Adopted in Chicago Foundries

Chicago, June 7.—Adjustment has been made of wages for molders and coremakers in Chicago foundries, an agreement having been signed by the Chicago Foundrymen's association for one year beginning May 1, 1919, fixing a minimum rate for molders at 80 cents per hour or $6.40 per day of eight hours. The agreement is the same as that for the previous year except for a provision that molders are to receive 10 per cent above the minimum rate when working a shift outside regular working hours.

It also is provided that a molder who is told to come to work and is not started, shall receive two hours' pay, except in cases where lay-off is due to conditions beyond the control of the foundryman.

Apprentices will work eight hours per day with overtime at the rate of time and a half. Wages for apprentices will be 40 per cent of the minimum rate to molders at the start and this will be increased on a scale ranging from 2⅝ per cent of the minimum molders' rate at the end of six months to 6½ per cent of the minimum molders' rate at the end of 42 months. The proposition of the molders for a 44-hour week was rejected.

Labor Service Makes Shift of Figures

Washington, June 10.—At last Cleveland has become one of the cities of the United States with an equal supply and demand for labor, at least according to a report issued by the United States employment service. This is a rather surprising statement as Cleveland, only about 10 days ago, was credited with a surplus of labor amounting to 30,000 in the report of the service. Chicago's unemployment figures from an equality of supply and demand last week are put at a surplus of 20,000 this week. These two cities have practically traded places in the unemployment list, but the service is silent as to the cause.

A great demand for farm labor still continues to come from the agricultural districts.

Frank Morrison, secretary of the American Federation of Labor, in speaking of the recent bomb outrages, attributed them to the alleged laxity of immigration laws. The house committee on immigration will begin hearings June 12.

A. S. M. E. Program

Final Plans for Detroit Meeting, June 16 to 19, Are Announced

Final arrangements are being made for the spring meeting of the American Society of Mechanical Engineers to be held at Detroit, June 16 to 19. Special cars will leave Friday, June 13, from New England points, New York, Washington, Baltimore and Philadelphia, arriving at Buffalo and Cleveland Saturday morning. The trip from these cities to Detroit will be made by lake steamer, which will be stopped a few hours Sunday afternoon at Put-in-Bay or Cedar Point, where an auto ride will be taken and dinner served. The boat will arrive at Detroit at 4:00 p. m., Sunday June 15.

The registration of members will begin at 10 a. m., Monday, at the Hotel Statler. Routine business will be handled in several meetings scheduled for the opening day. A special session will be held under the auspices of the committee on aims and organization. Monday evening a reception and dance will be held. On Tuesday trips will be made to the works of the Burroughs Adding Machine Co. and the Morgan & Wright Co. In the evening a musical entertainment will be given at Arena Gardens. Wednesday morning the Connors creek plant of the Detroit Edison Co. will be visited and in the afternoon members and guests of the society will enjoy a steamboat ride through the St. Clair flats. A trip of inspection will be made to the Ford Motor Co. plant Thursday afternoon.

The following is a tentative list of the papers to be presented:

Research Session, Tuesday, June 17

"The Present Condition of Research in the United States," by Arthur M. Greene Jr.

"Research Work on Malleable Iron," by Enrique Touceda.

Report of Subcommittee on Bearing Metals.

Report of Subcommittee on Lubrication.

"The Organization and Conduct of an Industrial Laboratory," by A. D. Little and H. E. Howe.

Industrial Relations Session, Tuesday, June 17

"The Status of Industrial Relations," by L. P. Alford.

Sections Session, Wednesday, June 18

"Central Station Heating in Detroit," by J. H. Walker.

"Production of Liberty Motor Parts at the Ford Plant," by W. F. Verner.

"Fire Engines and the Essentials of Fire Fighting," by C. H. Fox.

"Electrical Method for Measuring the Flow of Fluids in Pipes," by J. M. Spitzglass.

Gas Power Session, Wednesday, June 18

"Crude Oil Motors vs. Steam Engines in Marine Practice," by J. W. Morton.

"A Suggested Formula for Rating Kerosene Engines," by D. L. Arnold.

"Standards of Carburetor Performance," by O. C. Berry.

Fuel Session, Thursday, June 19

"Pulverized Coal as a Fuel," by N. C. Harrison.

"Economy of Certain Arizona Steam-Electric Power-Plants Using Fuel Oil," by C. R. Weymouth.

"Pulverized Coal for Stationary Boilers," by H. G. Barnhurst and Frederick A. Scheffler.

General Session, Thursday, June 19

"Elements of a General Theory of Wing Design," paper to be read by Walter C. Durfee.

"Air Fans for Driving Electric Generators on Airplanes," by Capt. G. Francis Gray, Lieut. John W. Reed and P. N. Elderkin.

"Mechanical Lifts, Past and Present, and a New Method for Their Balancing," by Lieut. J. F. Robbins.

"General Equations for the Design of Butt Riveted Joints," by A. A. Adler.

"The Economical Section of a Water Conduit," by Cary T. Hutchinson.

Obituaries

BENJAMIN SEBASTIAN, aged 69 years, founder of the Sebastian Lathe Co., Covington, Ky., died at his home in Cincinnati, after a short illness, June 5. Mr. Sebastian was a pioneer machine tool builder in Cincinnati, having been engaged in the manufacture of lathes nearly 40 years. He retired about three years ago and his son-in-law, E. E. Stokes, has had charge of the business since that time.

James F. Rose, who for a number of years carried on a machinist business in Franklin, Mass., until his health gave out several months ago, when he sold out and retired, died at his home in that town, June 5, aged 80 years.

Charles Granville Lund, vice president of the Turner Tanning Machinery Co., Woburn, Mass., and a former director of the Old Dominion Mining & Smelting Co., died of pneumonia at his home in Woburn, June 5, aged 48 years.

John G. Rohrman, formerly attached to the Pittsburgh sales force of the Youngstown Sheet & Tube Co., and subsequently district sales agent of the company in Atlanta, Ga., and who about two years ago assumed the Chicago agency of the Allegheny Steel Co., died recently at Elizabeth, Pa., following an illness of more than a year. He was a native of Philadelphia and about 34 years of age.

John B. Pero, father of John P. Pero of the Missouri Malleable Iron Co., East St. Louis, Ill., a former president and chairman of the board of directors of the American Foundrymen's association, died at his home in Indian Orchard, Mass., May 11, after an illness of three weeks, incident to old age, aged 84 years. He left his home in Chambley, P. Q., when 10 years old and went to Newton Upper Falls, Mass., where he learned his trade as an iron molder. Afterwards he was located in Lowell, Worcester and Waltham, Mass., until 1875, when he went to Indian Orchard and opened the foundry of the Chapman Valve Mfg. Co. He remained with the company 35 years.

Elisha Williams, for 41 years superintendent of the Richmond Iron Co., Richmond, Mass., which operates the oldest iron mines and charcoal furnace in New England, during which time he never was absent a single working day, died at his home in Richmond Furnace, Mass., May 25, aged 72 years. Mr. Williams before becoming manager for the Richmond Iron Co., in 1878, was for six years superintendent of the Lanesboro Iron Co. His son, Ray C. Williams, is vice president and secretary of the Richmond Iron Co.

Thomas H. Brooks, aged 73, retired structural iron and steel manufacturer, of Cleveland, died May 28, at the home of his daughter in that city, after several years of poor health. Mr. Brooks was born at Patriot, Ind., in 1846 and one year later his parents brought him to Cleveland, where they located. He was educated at Adelbert college and was graduated from Williams college in 1870. For several years he was affiliated with the King Bridge Co., Cleveland, and resigned to organize T. H. Brooks & Co., of which he was president until he retired about 12 years ago.

James Dougherty, father of John W. Dougherty, president of the Pittsburgh Crucible Steel Co., and vice president of the Crucible Steel Co. of America, and himself one of the oldest steel men in the country, died at his home in Steelton, Pa., May 29. He was 78 years old and began his connection with the steel industry with his father in the steel mills of Nashua, N. H. He served in steel plants in Nicetown, Pa. and Pittsburgh and became identified with the old Pennsylvania Steel Co. at Steelton in 1872, remaining with that company until he retired from active life a few years ago.

Bankers Fearing Overspeculation

Stock Market's Unrestrained Activity Presents Problem of Credit Competition With the More Urgent Needs of Industry and Foreign Trade—Federal Reserve Board Sounds Warning—General Iron and Steel Financial News

BY JOHN W. HILL, FINANCIAL EDITOR

THE incorrigible and unchecked confidence of the stock market is creating a problem of prime dimensions for those constructive financiers who are faced with the task of marshaling America's vast credit resources for purposes of resuscitating Europe's economic life and of supplying the requirements of legitimate domestic industrial expansion. Wall street's wild scramble for the rise in stocks, its more than twoscore million share days, and the enormous volume of money absorbed by the daily trading is causing considerable uneasiness. It is feared that the speculative movement, if the brakes are not applied, will lap up far more than its share of surplus credit, thus coming into competition with the more important and imperative needs from other sources.

So serious has this prospect grown and so heedless has the stock market become to every consideration of caution or repression, that the federal reserve board last week struck a challenging note of warning. It expressed deep concern over the runaway market and excessive speculation. As a result the call money rate leaped to 11 per cent and sensational declines occurred in many stocks—for the period of one day. Then the procession moved forward again.

As a matter of fact the federal reserve confessed its practical impotence in the face of the situation. It said:

"Ordinarily, a sharp check would be administered through the advancing of the rates of rediscount at the federal reserve banks. Such a check for this movement, however, encounters some difficulty as long as the federal reserve banks deem it necessary to promote the absorption of government securities by maintaining low rates." That some means will be found to prevent too great overspeculation, if Wall street refuses to take warning, is probable.

Former Restraints Are Lacking

In order to reduce the danger of Wall street competition for credit during the war, a powerful money committee was set up in New York for the purpose of doling out the money available for speculation. Before the creation of the federal reserve banks, and when there was no governor belt on interest rates, an excessive demand for funds for the stock market was corrected by skyrocketing call loan money rates, which sometimes went as high as 20 per cent. Now there is neither the feeding out machinery of the money committee nor the corrective of interest rates to meet the situation. Yet there is as great need for conservatism and restraint in the use of credit now as there was during the war. In fact the need is even greater, because it has always been the heedless, headlong speculative and industrial expansion of credit after great wars that brought about financial crashes in the past and not the result of war inflation itself.

But will the stock market contain itself? This is a question which is baffling the keenest observers, who admit that these are not normal times and precedents that served very well for the past may lead one astray today. One astute stock market commentator asserts that bull movements such as the present are divided into five phases, and that the market is now passing through the fourth. The first comes at a time of depression when important interests visualize returning prosperity before anyone else and begin to buy for the rise. Next comes public participation. In the third phase professional speculators take the center of the stage and manipulate sensational advances. The fourth phase is characterized by losing of all self-control by the manipulators themselves on the one hand and growing apprehension among bankers on the other. Finally comes the day of reckoning on the wings of some unheralded and unsuspected development. This is the sequence of events observed in previous bull movements but it is possible, of course, that the present instance is the one great exception. The heavy income tax which discourages wealthy holders of stock from taking profits and the adjustment of stock values more in line with the inflated prices of commodities, are important factors in the situation.

The two great problems of finance today are those involved in supplying adequate funds for financing shipments to the war-torn countries in Europe and for meeting the financial needs of the country. It is estimated that the next two years will see a deficit of $7,000,000,000 between the total sum anticipated from taxes and the aggregate of probable expenditures. The discrepancy may be larger and it may be smaller, but that it will be huge is undisputed. At the present the treasury's plans call for raising money through the sale of certificates of indebtedness to banks. But this means more pure inflation, when the great need now is the beginning of deflation.

Secretary Glass is bound by his promise made last spring, to have no more popular flotations. The suggestion has been made that the treasury try the plan of continuous note offering to the public, used so effectively in England. The matter will be decided upon at conference with federal reserve bank governors and other leading bankers in Washington this week.

No definite announcement in respect to a plan for financing foreign trade and stabilizing exchange rates is expected until after peace is declared. Important bankers are studying the problem and doubtless will be ready with a comprehensive plan in due time. To meet immediate requirements for raw material and machinery it is believed one year dollar credits will be necessary. All this kind of financing is expected to be done by the banks of the country, with no active participation by the government other than some measure of guarantee.

Dominion Steel Net Down

The annual report of the Dominion Steel Corp., Sydney, N. S., shows profits of $8,768,054, as compared with $11,030,112 for the previous year. After deducting bond interest and preferred dividends there was left available for dividends on common stock $5,470,468, as against $7,601,660 for the previous year. After deducting the common dividends $3,705,904 was carried forward, bringing the

total at credit of profit and loss to $17,459,251.

President Mark Workman in his report states that during the period which has elapsed since April 1, 1915, the total expenditure on construction and the acquisition of new properties was approximately $11,500,000. The net additions during the year to cost of properties amounted to $8,092,087, the chief expenditures being upon the property of the Dominion Iron & Steel Co., principally in respect to its mine at Wabana, its coke ovens, and its steel plate mill.

Buys Plow Plant

All the outstanding shares of the Chattanooge Plow Co. have been purchased by the International Harvester Co., according to advices from Chattanooga. Former United States Senator Newell Sanders is president and general manager of the company, which is one of the oldest and largest implement concerns in the south. The Harvester company is understood to have made the purchase in order to add a line of chilled plows to its implement production. Recently the company acquired the Parlin & Orendorff Co. of Canton, Ill., a plow company. There will be no change in the name of the Chattanooga Plow Co.

Westinghouse Gross High

All records were broken by the gross earnings of $160,379,943 for the year ended March 31 reported by the Westinghouse Electric & Mfg. Co. In 1918 the gross was $95,735,000 and in 1914 it aggregated $43,733,000. The surplus available for dividends after all charges and federal taxes was $15,059,097. Operating charges amounted to $129,271,000, leaving a net manufacturing profit of $31,408,000 or more than double the $15,509,000 of the preceding year. Federal taxes for the year totaled $15,395,000, more than half the net income. The company's gross surplus now is $36,207,732.

Plans Tin Plate Plant

Toronto, Ont., June 7.—Baldwins, Ltd., is negotiating with the imperial munitions board and the harbor commissioners to purchase the plant of the British Forgings Co., here. Baldwins, Ltd., plans to establish a large tin plate mill in the city and would use the electric furnace of the forgings plant in making steel ingots. The plant has a capacity of about 450 tons of steel per day. It would be adaptable to the manufacture of tin plate with few changes so far as the electric plant is concerned, but considerable additions would be required for the rolling and dipping of the plate.

Formulate Plan to Finance Railroad Equipment

Tentative plans of the special bankers' committee recently appointed by T. DeWitt Cuyler, chairman of the association of railway executives, to finance the $400,000,000 worth of railroad equipment ordered and mostly paid for by the railroad administration and partially allocated to the railroads provide for the formation of the $300,000,000 equipment trust. This is approximately 75 per cent of the cost of the equipment and represents about the proportion of the gross cost which bankers usually are willing to finance on such transactions.

It is expected the equipment trust will be arranged so that a public offer of securities will be possible. The proceeds of the offerings will go to reimburse the railroad administration for $300,000,000 of the $400,000,000 advanced by it. It is proposed to arrange for the remaining $100,000,000 by having the railroad administration lease the equipment to the railroads and under the tentative plan this would be accomplished during the life of the equipment trust, which probably will mature in 15 years. This plan, or any other that may be adopted, will have to be approved by the committee of bankers, as well as by the railroad administration.

Retains Plant Interest

The personnel of the Chelsea, Mass., works of the Griffin Wheel Co., will not be affected by the absorption of the company by the American Steel Foundries, it is announced. Although relinquishing stock control of the company the Griffin estate still retains $500,000 in preferred stock and will have an active voice in the management of the company. Carl P. Dennett and George F. Griffin will remain on the board of directors and the executive committee of the wheel company. The trustees of the estate received $90 per share for their holdings of common stock plus interest at the rate of 7 per cent per annum from Jan. 1, 1919, less a dividend of 2 per cent paid on April 15 last. At par for the 59,000 shares of preferred stock and $90 for the 87,000 of common, the American Steel Foundries bought the Griffin Wheel control on the basis of approximately $14,000,000 for the entire company.

Benzol Scarcity

Results in Higher Prices—Firmness in Other By-Products

New York, June 9.—Heavy demand for benzol fuel, in conjunction with the consumption of pure and 90 per cent benzol by the rubber industry, is reducing materially the supply of the latter product. Spot material is virtually out of the question, and most sellers are booked many weeks ahead. Another factor in this shortage is the curtailed operations of the iron and steel industry. Due to the scarcity of supplies, prices have advanced. Pure benzol now is being quoted at 24 to 28 cents, and 90 per cent benzol at 23½ to 27 cents. The market on benzol fuel continues oversold. Consumers are offering several cents above the market in a number of instances for spot material without success. On future material prices one and two cents above the present market are being paid.

Owing in large measure to the heavy demand for benzol fuel, supplies of toluol are diminishing steadily. Prices consequently are very firm at 25 to 35 cents. Although in relatively small demand, solvent naphtha, for much the same reason, is in none too great a supply. It is firm at 20 to 25 cents per gallon.

The drug trade, the biggest buying factor in the naphthalin market in recent weeks, is becoming steadily less active. However, the dye industry is buying in fair quantities, with the result that the market continues fairly active with prices unchanged. Naphthalin, in flakes, is quoted at 8½ to 9½ cents and, in balls, at 10½ to 11½ cents. Phenol may be quoted around 10 cents.

Coke Oven By-Products

Spot

Per Gallon at Producers' Plant

Pure benzol	$0.24 to .28
Toluol	.25 to .35
Solvent naphtha	.20 to .25

Per Pound at Producers' Plants

Phenol	$0.10
Naphthalin, flake	0.08½ to .09½
Naphthalin, balls	.10½ to .11½

Per 100 Pounds at Producers' Plants

Sulphate of ammonia	nominal

Contract

Pure benzol	$0.22 to .27
Toluol	.25 to .35
Solvent naphtha	.20 to .25

Per Pound at Producers' Plant

Phenol	$0.10
Naphthalin, flake	0.08½ to .09½
Naphthalin, balls	.10½ to .11½

Per 100 Pounds Producers' Plants

Sulphate of ammonia	nominal

Machinery Trading Shows More Life

Dealers Report Flood of Inquiries on Which They Expect Action Soon--Purchasers More Ready to Close as Prices Give Indication of Rising—Automobile Trade Leads Fairly Heavy Buying Movement

MEASURED in terms of dollars and cents, the week's machinery market is described as satisfactory, although large orders numerically have been absent. Opportunity is being had by dealers to figure on numerous inquiries for small lots of tools. With a gradual dissipation of the belief that prices are to be lower, buyers of small lots are more active in closing, although in Cleveland, complaints still are heard that some are holding off. It is believed that within a week or two much heavier buying will commence, since so many quotations are out on which action has not yet been taken. Manufacturers in the Cincinnati district have given indications that tool prices are to be higher. This applies not only to lathes but to machine tools generally. One reduction of 15 per cent on hydraulic presses is noted in the East. Buyers in all sections are taking more interest in deliveries than in prices, since some lines cannot be had before October.

While action has been restricted on large lists, many buyers have been filling in their equipment. In the East, the American Shell Co., Paterson, N. J., bought several tools. The Graphophone Co., Bridgeport, Conn., wound up its purchase of $500,000 worth of machinery. Scattered buying in Chicago has rolled up a pleasing total. The Bucyrus Co., Milwaukee, bought five turret lathes on its $200,000 list. Similar tools were purchased by a Wisconsin auto maker. The Nash Motors Co., Kenosha, Wis., is negotiating for equipment. The Studebaker Corp. has bought intermittently on its large list in Chicago, Detroit and Cleveland, as has the General Motors Corp. In fact the automobile trade again is the big buyer.

Steel manufacturers, however, are taking their share as are other manufacturers. The Illinois Steel Co. closed on part of its list in Chicago; the Central Steel Co., Massillon, O., bought recently in Cleveland; and the Weirton Steel Co.'s heavy equipment has been placed with the Morgan and Champion Engineering companies. The American Locomotive Co. issued a small list as did the Bedford Y. M. C. A., Brooklyn, N. Y. The Firestone Tire & Rubber Co., Akron, O., is understood to have closed on about six tools.

More activity is noted in export circles. In Chicago these shipments are mostly made up of large boring mills for France and Italy. Canada reports that business is improving generally with a free movement of machine tools to new shops. Sales of woodworking machinery are frequent. The International Safe Co., Fort Erie, Ont., recently issued a fair sized list of equipment.

Of interest to the machinery trade generally, is the announcement from Washington, carried on pages 1562 and 1563, this issue, that the machine tool section of the war department has evolved a workable plan for the appraisal and disposal of the government's machine tools on hand in over 500 plants all over the country. A recent estimate placed the value of these tools at $75,000,000. It appears that extra care is being taken so that the market will not be flooded with this equipment to the detriment of the manufacturing end of the industry.

American Steel Buys Tools to Produce Motors

TRADING in the eastern machine tool market during the past week has been only fair. Sellers report that the volume of miscellaneous business has been rather restricted and that action on the few current larger lists is slow. One buyer, the American Shell Co., Paterson, N. J., which recently was in the market for a number of machine tools, has closed on a fair amount of equipment, but has confined its purchases, for the most part, to second hand tools. It is understood that four new Brown & Sharpe milling machines were bought. The second hand equipment, however, included 10 Warner & Swasey turret lathes, and a number of Cleveland and National Acme automatic screw machines at the plant of the International Arms & Fuse Co., Bloomfield, N. J. The Graphaphone Co., Bridgeport, Conn., which is erecting a new plant, bought several machines, thus completing a large list of purchases. It is stated that the company within the past couple of weeks has bought more than $500,000 worth of miscellaneous machine tools.

The retrenchment policy adopted by congress regarding various appropriation bills now pending is of much interest to the machinery trade. The $1,200,000,000 asked by Director General Hines as a revolving fund for the railroads will be reduced to not more than $900,000,000, according to present indications, and the naval bill reported Tuesday carried an appropriation of about $550,000,000, as compared with $800,000,000 at the close of the last session. This latter bill carries several important items of interest to the machine tool trade, including a $400,000 machine shop at the Philadelphia navy yard. The sundry civil bill, which in the last session carried $850,000,000, may also be materially reduced. This bill at the last session provided $660,000,000 for carrying on the building program of the shipping board. In this latter connection it is now reported that the shipping board plans to award contracts shortly on the construction of three large dry docks at the port of New York.

While a reduction of 15 per cent was made in a representative line of hydraulic presses during the past week, manufacturers' prices generally remain firm; in fact, it is

Ludlum Steel Consistently Uniform

Mohawk Extra
High Speed Steel

Albany
Alloy Tool Steel

Huron
Alloy Die Steel

Yuma
Chrome Magnet Steel

Pompton
Carbon Tool Steel

Oneida
Oil Hardening Steel

Teton
Ball Bearing Steel

Seminole
"Foolproof" Chisel Steel

The extreme high quality attained in the manufacture of *"Ludlum" Steels* does not just "happen." It is the result of thoroughness and care throughout the entire process of manufacture.

The illustration above shows a small section of our large chipping room—just another precaution to assure users of *"Ludlum" Steels* the kind of material that most particular users of high speed steel are demanding.

What are your requirements?

Prompt shipments from warehouse stock at Watervliet, N. Y., Detroit, Mich., Chicago, Ill., or Cambridge, Mass., handled through our District Office.

Ludlum Steel Company

General Offices and Works:
WATERVLIET, N. Y.

Branch Offices:
New York City Philadelphia Cambridge, Mass. Cleveland
Cincinnati Detroit Chicago Buffalo

understood that several Cincinnati lathe manufacturers are considering advancing their quotations within the near future. There have been, however, concessions by some dealers, who have been, apparently, sacrificing a share of their commission. It is understood that in addition, they, in a couple of instances at least, have also made discounts for cash. New inquiries include a list calling for three floor lathes, a shaper, a couple of bench lathes, and several other tools for the Bedford branch of the Y. M. C. A. in Brooklyn, and a number of tools for the American Locomotive Works, 30 Church street, New York.

The most important inquiry to come in the eastern crane market during the past week calls for four 10-ton cranes, with 84-foot span, one 15-ton, with 100-foot span, and one 15-ton, with a 75-foot span, for the Bethlehem Steel Co. The Bethlehem Shipbuilding Corp. is in the market for a 10-ton crane, with a 26-foot span. Hunter & Havens, Bridgeport, Conn., are in the market for two cranes, of either 3 or 5 tons capacity each, with 50-foot span. Jerome & Jackson, Long Island City, N. Y., is inquiring for a 20-ton overhead crane. Another inquiry is that of the Roberts Co., Drexel building, Philadelphia, which is asking for a 15-ton electric crane. Hugh S. Roberts, 1123 Broadway, New York City, who is estimating on a submarine base at Hampton Roads, Norfolk, Va., is asking for figures on two electric cranes.

Among awards of the past week is a 20-ton electric crane placed with Niles-Bement-Pond for the Watertown arsenal, Watertown, Mass. Stone & Webster, Boston, placed a 20-ton locomotive crane with the Browning Hoist Machinery Co. The West Virginia Pulp & Paper Co., through its office on Fifth avenue, New York City, has purchased a 15-ton locomotive crane from Industrial Works.

The Midvale Steel & Ordnance Co., although it recently withdrew an inquiry for four overhead cranes, is expected to be in the market again shortly. The board of directors has just authorized the expenditure of approximately $8,000,000 for new building and reconstruction at Johnstown, Nicetown and Coatesville, Pa., which will, it is believed, result in the purchase of considerable new equipment in the near future.

Bids on the gantry cranes for the municipal pier at Providence, R. I., have been rejected and all bonds have been returned to the various respective bidders. No explanation was given for this action, and no knowledge is now at hand as to whether the project will be finally put through. Two proposals were entertained, one calling for the installation of eight gantry cranes and the other for six. Seventeen companies figured on the work, and 21 bids were submitted, the prices covering a wide range. It is understood that the highest offer was more than 200 per cent higher than the lowest proposal.

Sales Total High at Chicago

BUYING of machine tool equipment in Chicago continues on a heavy scale and the volume of business measured in dollars is extremely large. The total for May for one dealer in Chicago was the heaviest in 1919. Another dealer finds his total sales for May the largest but one since he entered business. This business, however, is coming entirely in scattered sales with almost nothing in the way of large equipment buying. Delivery on many classes of tools now cannot be given before September, indicating that manufacturers are filled up fairly well. No further reductions have been made recently and in some cases guarantees on prices have been discontinued. The tendency of prices seems to be upward, although no increases have been made.

The Bucyrus Co., Milwaukee, has closed for five motor-driven turret lathes of large size but has deferred closing for the remainder of its list for a fortnight. The total for this company is unusual in the present market as it runs to about $200,000. A Wisconsin automobile manufacturer has just closed for two automatic turret lathes. Export demand for large boring mills running from 52 to 86 inches is strong, France and Italy both desiring these in their program of reconstruction. The Studebaker Corp. is closing on its recent inquiry, most being placed through Detroit agencies, but a few tools being handled by Chicago dealers. The Illinois Steel Co. bought only part of its list and apparently the remainder is not active. Railroads continue to remain out of the market. The Nash Motors Co., Kenosha, Wis., is negotiating for a few tools.

Weirton Steel Closes on Equipment

ONE of the big equipment contracts which has been engaging the attention of the Pittsburgh trade has been closed. The Weirton Steel Co., Weirton, W. Va., which is constructing a new steel plant has placed two 175-ton ladle cranes, two 100-ton ladle cranes, one 100-ton mixer, two 7½-ton soaking pit cranes, one 150-ton screw type ingot stripper and two floor type open-hearth charging machines with the Morgan Engineering Co., Alliance, O. The mill cranes for this project, 10 in number and of standard type, were placed with the Champion Engineering Co., Kenton, O., the order being placed through the Pittsburgh office of that company.

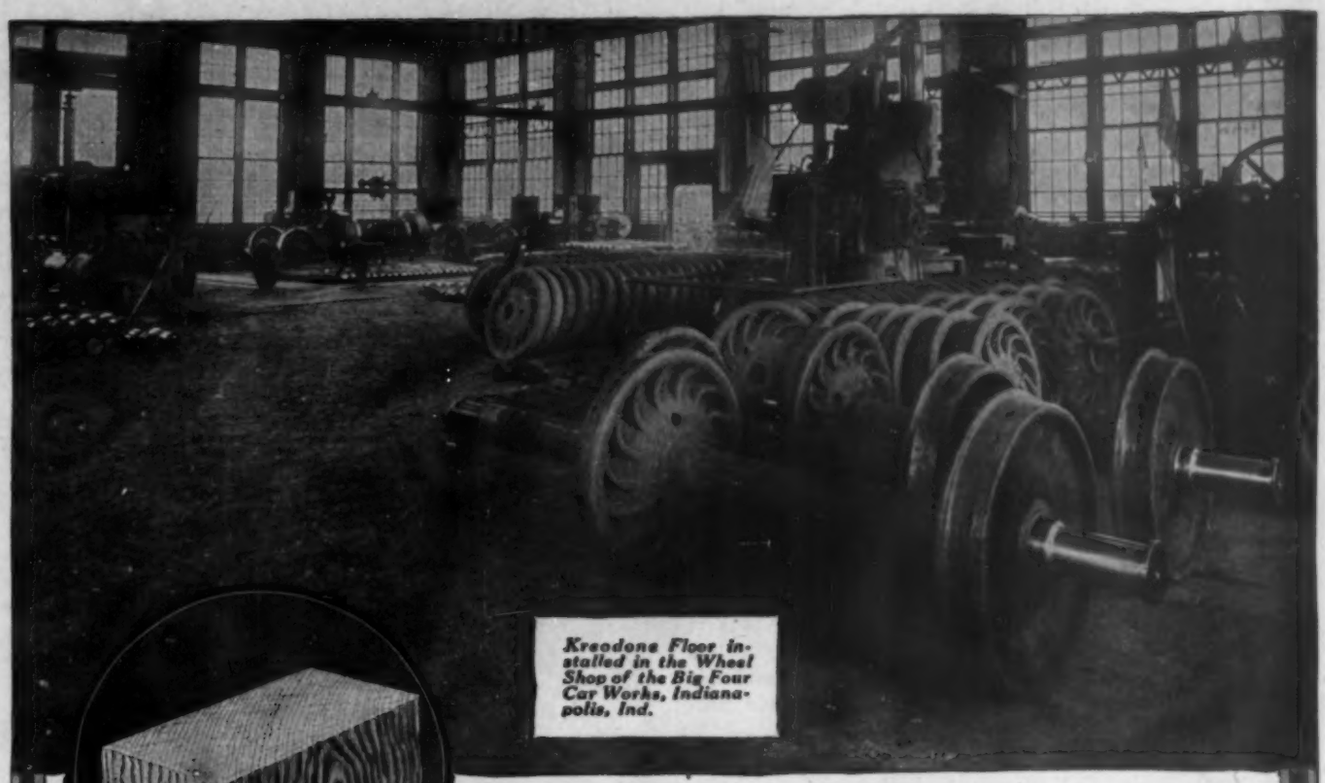
Nothing has yet developed in connection with the cranes required for the new car shops of the Pennsylvania railroad lines west, at Stark, O., and it is believed placing of this business will not be made until after congress has made the money available through the passage of the railroad revolving fund appropriation. The 22 cranes for the new naval ordnance plant at Charleston, W. Va., have yet to be distributed.

In general, the machinery and tool business daily is getting better. It is understood that several lists recently have been put out, but those receiving them, as usual, are secretive about details in the fear of creating competition.

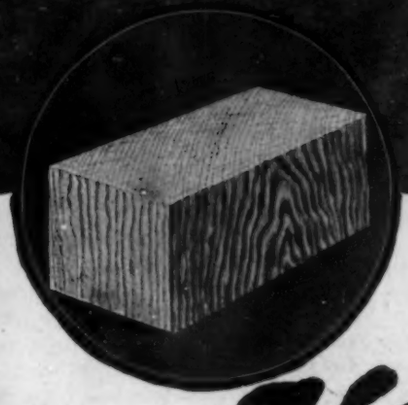
A veritable flood of individual tool inquiries has been received by light machinery interests lately and in view of the fact that buyers are not much concerned about prices, it is probable that a great many of these inquiries will be closed shortly. A Pittsburgh manufacturer of automobile bodies, holding a contract with a Cleveland automobile manufacturer, closed recently on a list of tools.

Cleveland Dealers' Prospects Good

WHILE no particularly large tool lists are current in the Cleveland machinery market, miscellaneous inquiries keep coming in in pleasing volume. If a fair number of these materialize this month, June will come up to and possibly exceed dealers' expectations, since they have large numbers of quotations out. Many sellers of equipment believe there is every reason for this, since buyers fast are relinquishing the idea that prices are coming down. This feeling is being superseded by one that increases are impending. Travelers to the Cincinnati, O., district report a strong tendency upon the part of manufacturers of lathes, planers as well as other machine tools not to release machines en route through their factories at prevailing prices. The belief is expressed that these are being held for higher prices upon completion. No little difficulty is being experienced by manufacturers in the Cincinnati and Hamilton, O., and Aurora, Ind., territories by reason of strikes in foundries; toolbuilders are unable to obtain the castings they require



Kreodone Floor installed in the Wheel Shop of the Big Four Car Works, Indianapolis, Ind.



Reconstruction—and Kreodone EVERLASTING Wood Block Floors

Shop floors as a rule stand terrific abuse—for a while—but few, if any can make the satisfactory showing of the KREODONE Wood Block Floor in the wheel shop of the Big Four Car Works at Indianapolis, Indiana.

Look at the illustration. The tremendous weight of car-wheels and axles comes in contact with the floor through one sharp point on the narrow flange of each wheel. It is practically a cutting contact yet each KREODONE block to date has preserved its integrity and gives promise of years of service-ability.

That's the kind of a floor you need to conform to the demands of the Reconstruction Period. It not only *wears like steel, but it speeds your workers.*

Bad floors act as brakes on effort. Transport by trucks is made difficult. Workmen are slowed up. The men's feet get tired and tender, which takes the "pep" out of willingness—and the work drags.

A KREODONE Floor, on the contrary, speeds up your time schedule. It is smooth, resilient, restful and offers a perfect foothold. Your men can and will produce more. It is sanitary, dust-proof, noise-less, level, warm in winter, cool in summer, economical—and *permanent.*

KREODONE Wood Block Floors wear like iron. They do not warp, pit, sweat or split—*unlike many cheap imitations of which you should beware.*

Get the *Genuine KREODONE* Blocks
Watch that Spelling—it means Service

REPUBLIC CREOSOTING COMPANY

INDIANAPOLIS, INDIANA

PLANTS: Indianapolis Minneapolis Mobile Seattle Norfolk

for the manufacture of their various machine tools.

Statements regarding deliveries of new tools differ widely, being nearly as numerous as the lines handled. One manufacturer of lathes is able to ship out of stock; another cannot ship in less than 60 days. This same applies to automatic screw machines. Generally speaking, however, deliveries on lathes, planers, shapers, etc., are good, while on grinding machines, milling machines, drills, pipe machines, etc., they are postdated, in some cases as far ahead as October. One eastern manufacturer of grinding machines, supplying the Cleveland market, is working his plant night and day in an effort to catch up. Similar action is contemplated in other plants.

Contracts recently were closed by the Central Steel Co., Massillon, O., for several fair sized tools, including a boring mill and a few large lathes. Some of the automobile interests continue to close on their requirements from time to time in Cleveland and in Detroit. This includes the General Motors Corp., the Studebaker Corp., and others. One of the biggest inquiries on which action is expected immediately is that of the Firestone Tire & Rubber Co., Akron, O., which is maintaining its own machine shop. Five or six machines are wanted now, including a lathe, planer and shaper. The Liberty Motor Co., Detroit, which has been disposing of a large quantity of its machine tool equipment, is understood to be getting ready to place other orders for needed tools, including some milling machines.

Inquiries for small lots of tools are numerous. The Lang Auto Body Co., Cleveland, is buying some trimming machines. The Crestline Mfg. Co., Crestline, O., maker of pumps, wants a quick-change, high-speed drill. The Empire Brass Co., Cleveland, is endeavoring to locate a 16-inch shaper and a 14-inch shaper is wanted by the Premier Electric Co., Cuyler avenue, Chicago. The Luther Grinder Mfg. Co., Milwaukee, wants a turret lathe and the Acme Machine Works, Chicago, a disk grinder. The Muncie Wheel Co., Muncie, Ind., is in the market for woodworking machinery. The Holton Tractor Co., Indianapolis, is buying machinery for tractor manufacture. The Advance Pump & Compressor Co., Battle Creek, Mich., is erecting a machine shop, power house and foundry, the equipment for which will cost $75,000.

Building plans on the part of various manufacturers fast are taking form and promise large tool needs soon. The Robbins Myers Electric Co., Springfield, O., plans to build a large motor fan plant, which will house 9000 men under one roof. The G. I. Dill Tractor Mfg. Co., Harrisburg, Ark., is to erect a plant at Little Rock, Ark. The Champion Spark Plug Co., Toledo, O., is expecting to build a $750,000 plant at Windsor, Ont. Additions to its Muskegon, Mich., plant during 1919, by the Continental Motors Corp., Detroit, will call for the expenditure of about $750,000. The International Harvester Co. is planning an addition to its Akron, O., plant. The Sterling Machine & Stamping Co., Wellington, O., is to erect an addition to its plant in the near future.

Tool Business Improves in Canada

CONSIDERABLE improvement is noted in Canadian industrial conditions this week and dealers expect that the near future will bring still greater improvements in business. The strike situation is still an unfavorable factor, but there appears to be a more hopeful tone in regard to the speedy settlement of the difficulties between capital and labor. Along with the general improvement, business in the machine tool market is also showing considerable betterment and in a number of cases those requiring tools are finding that delivery is becoming more uncertain and in some lines delivery cannot be made for several months. The International Safe Co., Fort Erie, Ont., is in the market for equipment including a portable electric drill, with 7/16 chuck; portable electric grinder; power gap shears for ⅛-inch stock; power punch press, weight about 5000 pounds; tool room lathe, 22-inch planer, 4 feet over all; electric spot welder; tool room forge, etc. The demand for wood-working machinery is improving, and dealers state that requests for equipment for new shops are being received in large volume.

New Construction and Equipment

Concise and Timely Business Building Opportunities from the Field of Industry

Among New England Plants

WINDSOR, VT.—The Windsor Foundry Corp., recently organized, plans the construction of a plant, 80 x 200 feet. It has acquired the plant of the Cooley-Wright Mfg. Co. for temporary operations.

BOSTON.—The Preston Grading Machine Co. has been incorporated with $30,000 capital by Marshall V. Preston, Fred W. Fisher and A. B. White.

BOSTON.—The Improved Cutter-Bar Co. has been incorporated with $150,000 capital by James T. Carroll, Edouard J. Morand and John A. Coveney.

BOSTON.—The Totem Die Co. has been incorporated with $25,000 capital, by Nathan Heard, Newton; Mass.; E. G. Morris, Medford, Mass., and Thomas J. Drummond.

BOSTON.—The Beacon Oil Co. has been incorporated with $2,500,000 capital by Dunbar F. Carpenter, Chicago, John C. Rice and George W. Matthews, and will build a refinery in Everett, Mass.

CHICOPEE, MASS.—The Torrington Mfg. Co., brass goods, is reported planning the erection of a plant addition at an estimated cost of $50,000.

CHICOPEE, MASS.—The King Steelcoating Co. has been incorporated with $100,000 capital to make steel and metal coatings, by Charles W. King, E. G. Geylord, Oscar B. Deane Jr., Springfield, Mass.

FARNUMSVILE, MASS.—A 4-story machine shop, 36 x 52 feet, will be erected at the plant of the Wauskauit Mills.

LEOMINSTER, MASS.—The Visoloid Co. is reported planning to erect a 2-story machine shop, 40 x 50 feet, according to a report.

MEDFORD, MASS.—Andres F. Curtin has let the contract for a 2-story, 26 x 40-foot machine shop.

SPRINGFIELD, MASS.—The Smith Plumbing & Auto Metal Co., 531 Worthington street, is reported planning to build a 1-story, 58 x 100 foot plant at an estimated cost of $18,000.

WATERTOWN, MASS.—The National Metal Products Co. has been incorporated with $50,000 capital by Fred E. Crawford, William W. Rugg and Elvin P. Worth.

PROVIDENCE, R. I.—The Atlantic mills will build a brick and steel, 46 x 98-foot power house.

ANSONIA, CONN.—Plans are being drawn for a brick, mill construction, 1-story, 80 x 290-foot fac-

Highest Quality

STANDARD OLD BASIN CONNELLSVILLE COKE

We operate 1108 Ovens
Our Monthly Capacity
is 70,000 Tons

Mines and Coke Works located in Fayette County at Oliver, Redstone Junction and Oliver No. 3, Pennsylvania, near Uniontown, Pennsylvania.

P. R. R., B. & O. (P. & L. E. Connections)

HIGH GRADE COAL
For
By-Product Oven Use

Oliver & Snyder Steel Co.

General Offices: South 10th and Muriel Streets, Pittsburgh, Pa.

Say you saw it in THE IRON TRADE REVIEW

tory to cost $85,000, for H. C. Cook, metal novelties, to which two stories are to be added later.

HARTFORD, CONN.—The Asa S. Cook Co., wood screw machinery, will build a 1-story addition to its factory.

NEW BRITAIN, CONN.—The Taplin Mfg. Co., hardware specialties, will build a brick, 2-story factory to cost $20,000.

NEW BRITAIN, CONN.—The Corbin Screw Corp. division of the American Hardware Corp. has let the contract for a 6-story, 60 x 120-foot factory to cost $90,000.

NEW BRITAIN, CONN.—The Associate Mfg. Co. has been incorporated to make automobile accessories and equipment, with $100,000 capital, by W. E. Taft, Providence, R. I., Charles E. Hadfield and H. E. Kingsley.

NEW HAVEN, CONN.—Operations at the plant of the Marlin-Rockwell Co. will be removed to Norwich, Conn.

NEW HAVEN, CONN.—The New Haven Hardware Specialties Co., Porter street, plans the erection of a 2-story, 40 x 60-foot plant at an estiamted cost of $16,000.

WATERBURY, CONN.—A 1-story power house, 35 x 50 feet, will be built by the American Brass Co. at an estimated cost of $50,000.

North Atlantic States

ALBANY, N. Y.—The Thacher Propeller & Foundry Corp. has been incorporated with $1,200,000 capital, by H. S. Bell, T. C. and G. H. Thacher.

BROOKLYN, N. Y.—The Perkins Marine Lamp Co., 1943 Pitkin avenue, has filed plans for the erection of a 1-story extension, 25 x 50 feet.

BROOKLYN, N. Y.—A $20,000 addition will be erected to the plant of Josiah Herrocks, Inc., Schenectady avenue. The company operates an iron and wire working plant.

BROOKLYN, N. Y.—The Prospect Engineering & Welding Co. has been incorporated with $100,000 capital, by F. J. and J. A. Wasilowski and W. H. Johnson, 55 Hanson place.

BROOKLYN, N. Y.—The Hygrade Lighting Fixture Corp. has been incorporated to make and construct metal works with $10,000 capital, by H. Cohn, H. S. Axelrod and P. L. Woodward, 115 Broadway.

BUFFALO.—The Niagara Brass & Mfg. Co. has purchased the Holly Co. shops at Lockport, N. Y., and will use them as a brass foundry and machine shop.

CARTHAGE, N. Y.—The Wilna Machine Co., 111 North Mechanic street, is reported planning to build a 2-story plant, 50 x 80 feet at an estimated cost of $25,000.

NEW YORK.—The No-More Key Mfg. Co., mechanical devices, has been incorporated with $100,000 capital, by P. Mascrorilli, S. F. Frank and N. Dobson, 170 Broadway.

NEW YORK.—The H. K. Lorentzen Saw Corp. has been incorporated with $30,000 capital, by J. A. Bradbury, H. K. Lorentzen and P. W. Carroll, 369 Edgecombe avenue.

NEW YORK.—The Canso Mfg. Co., metals and metallic compounds, recently was incorporated with $25,000 capital, by B. Schnee, L. Pollak and D. M. Pompan, 53 Jay street.

NEW YORK.—Jonas B. Oglaend, Inc., agricultural implements, recently was incorporated with $75,000 capital, by J. B. Oglaend, M. M. Lloyd and R. E. Shortall, 27 William street.

NEW YORK.—The Sales Check Machine Corp. has been incorporated to make apparatus for ticket registration with $100,000 capital. The incorporators are E. H. Weeks, D. H. Douglas and W. C. Woodward, 280 Fifth avenue.

SYRACUSE, N. Y.—The foundry at the plant of the Onondaga Steel Co. recently was damaged by fire.

BUTLER, PA.—The Keystone Pipe & Supply Co. will build an addition to its plant.

HOMESTEAD, PA.—The Homestead Valve Mfg. Co. recently increased its capital from $50,000 to $125,000.

INDIANA, PA.—The Indiana Foundry Co. is doubling the capacity of its foundry. The building will be of steel and tile construction. Workmen recently completed erection of a cleaning room, 70 x 140 feet.

LEBANON, PA.—This city is arranging to build an electric light plant.

LOCK HAVEN, PA.—The Lock Haven Fire Brick Co. will make enlargements to its plant.

PHILADELPHIA.—The H. E. Pyle Baler & Wire Co. recently was incorporated with $5000 capital to manufacture and sell baling presses and wire, by Harry E. Pyle and R. L. Strouse, Belle Claire apartments, Philadelphia and Harry E. Smith, 3845 North Franklin street.

PHILADELPHIA.—Robert Scott, Inc., has been incorporated with $15,000 capital to construct and erect power and mechanical equipment, by John G. Hughes, Haddenfield, N. J., Bernard A. Illoway, 0638 Green street, Philadelphia, and Abraham Friedman, 2916 Oxford street, Philadelphia.

PHILADELPHIA.—The Houpett Machine Co. recently was incorporated with $25,000 capital to manufacture and sell machine, motor and engine parts, by Alfred G. Rinn, 139 North Fifteenth street, Philadelphia; William Oxley, same address, and Henri J. Houpert, Mamaroneck, N. Y.

PITTSBURGH.—The Peoples Natural Gas Co. has filed plans for the erection of a 1-story machine shop.

PITTSBURGH.—The Pittsburgh Malleable Iron Co. has acquired the 2-story building of the Keystone Axle Works.

PITTSBURGH.—The Wolverine Supply & Mfg. Co. is having plans drawn for the erection of an addition to its plant.

PITTSBURGH.—The Damascus Bronze Co., 928 South street, is reported planning the erection of a plant addition, 80 x 80 feet.

PITTSBURGH.—The Oscillating Washer Co., manufacturer of washing machinery, recently increased its capital from $75,000 to $100,000.

PITTSBURGH.—The National Metal Moulding Co., Fulton building, has broken ground for the erection of a 1-story addition, 130 x 250 feet, to its plant at Economy, Pa.

PITTSBURGH.—The Duff Mfg. Co., manufacturer of railroad jacks, has placed a contract for the construction of a 1-story forge shop to be built at an estimated cost of $36,000.

PITTSBURGH.—The Keystone Die & Mfg. Co. recently was incorporated with $30,000 capital to engage in the manufacture of iron, steel and metal products, by Joseph J. Saepe, Millvale, Pa., K. M. Hickley, 1705 Laurel street, Pittsburgh, and William H. Lagemann Jr., 206 Beltzhoover avenue, Pittsburgh.

POTTSVILLE, PA.—The blacksmith and carpenter shop of the Eastern Steel Co. recently was damaged by fire.

STROUDSBURG, PA.—The Bennett-Guyer Automobile Co. will build a plant here in the near future.

SHARON, PA.—The Sharon Steel Hoop Co. will build an addition to its plant here shortly.

BOUND BROOK, N. J.—The Bound Brook Oilless Bearing Co., Main street, is reported planning to build a 2-story addition, 100 x 140 feet.

CAMDEN, N. J.—The American Shipyard Co., foot of Division street, has been incorporated with $100,000 capital, to engage in the building of ships, etc.

JERSEY CITY, N. J.—James Spence, 921 Garfield avenue, is reported planning alterations to his foundry.

JERSEY CITY, N. J.—The Lafayette Iron Works, Inc., recently was incorporated with $1500 capital, by David Marshak and Isreal Marshak and Samuel Katz.

JERSEY CITY, N. J.—Jo-So Mo-Tor Co. has been incorporated with $125,000 capital to build combustion engines by J. C. Soeman, Philip Niedermaier and C. S. Soeman.

JERSEY CITY, N. J.—The Drop Forging Co. of New York, Westside avenue, has filed plans for the construction of a 1-story addition, estimated to cost $18,000.

NEWARK, N. J.—Heller Bros. will erect 1-story factory building.

NEWARK, N. J.—A 3-story addition, 40 x 50 feet, will be erected by the American Aluminum Ware Co.

NEWARK, N. J.—About $150,000 will be expended by the Public Service Electric Co. for an extension.

Central States Activity

BEAVER DAM, WIS.—The Bell Mfg. Co. is opening a plant for the manufacture of barn equipment, stock farm specialties, drinking fountains for cattle, etc. The proprietors are F. W. Schettler, C. S. Knaup and B. E. Belling, manager.

BLACK RIVER FALLS, WIS.—The city council of Black River Falls is planning improvements to the municipal hydro-electric plant, to cost $25,000, including a vertical type waterwheel and 400 horsepower umbrella type generator.

BELOIT, WIS.—A bond issue of $30,000 has been voted for a steel bridge.

BURLINGTON, WIS.—The William J. Pieters machine and blacksmith shop on Pine street has been taken over by Luhn & Peeters, who will conduct it as a garage, repair shop and machine works.

CHIPPEWA FALLS, WIS.—Architects Beers, Schlinz & Bailey, Chicago, are preparing plans for a $200,000 vocational training institute and junior high school, 100 x 200 feet, three stories, with a central heating and power plant. Bids will be taken about June 15 or 20. P. T. Faville is secretary of the board of education.

FOND DU LAC, WIS.—The National Drop Head Projector Co. is at work on the first unit of its plant, costing $50,000. It will manufacture portable motion picture machines.

FORT ATKINSON, WIS.—Roberts & Russell, proprietors of the Fort Atkinson Auto Co., will make a 1-story addition, 40 x 50 feet, for repair shop purposes.

HARTFORD, WIS.—C. H. Lohr, proprietor of the Lohr Auto Co., will build a garage, 60 x 110 feet, to be devoted entirely to machine work and repairs.

KEWAUNEE, WIS.—The Leyse Aluminum Co., formerly the Aluminum Sign Co., is erecting a 2-story plant addition, 60 x 150 feet. The company is providing facilities for manufacturing a general line of kitchenware and aluminum utensils.

MARINETTE, WIS.—The Aerial Cutlery Co. has

awarded contracts for the erection of an L-shaped shop addition, 46 x 68 and 26 x 30 feet, two stories. Some new tools will be installed.

MILWAUKEE.—The Florentine Appliance Co., capitalized at $50,000, has been chartered to manufacture specialties by Edward J. Yockey and M. Brittell.

MILWAUKEE.—A $50,000 warehouse addition, 70 x 115 feet, four stories, will be erected by the John Pritzlaff Hardware Co., 33-57 West Water street.

MILWAUKEE.—The Grate-Cut Mfg. Co., capitalized at $10,000, has been chartered to manufacture food cutters and slicers by Edward M. Bauer and Jacob L. Bauer.

MILWAUKEE.—The American Metal Parts Mfg. Co. has been incorporated with a capital of $150,000 by Edgar Harum, Leon Smith and Arthur White. The company will manufacture specialties, develop patented inventions, etc.

MILWAUKEE.—Articles of incorporation have been filed by the Galvanizing & Sales Co. The capital stock is $12,500 and the objects are to engage in hot process galvanizing, tinning, etc. The incorporators are Royden E. Webster, 389 Thirty-fourth street, Albert B. Houghton and Neele B. Neelen, attorneys.

MILWAUKEE.—Tentative plans for a new office building, 70 x 120 feet, three stories, are being prepared for the Vilter Mfg. Co., 872 Clinton street, manufacturing ice and refrigerating machinery, corliss engines, etc. The present office will be used later as a site for a shop addition. Theodore O. Vilter is president.

MILWAUKEE.—Additions and other improvements costing about $350,000 will be made this year by the Briggs & Stratton Co., manufacturer of automobile, truck, tractor and gas engine parts. Its 5-story plant will be duplicated by the erection of a new shop, 60 x 205 feet. A 4-story office building, 50 x 120 feet, will also be erected. Plans are being prepared by Architect Herman J. Esser, Camp building, and will be ready for bidders about June 30.

SHEBOYGAN, WIS.—The F. Blocki Co., Eighth street and Maryland avenue, plans the erection of a 3-story, 60 x 120 feet, to be devoted to the manufacture of agricultural implements.

TWO RIVERS, WIS.—A new press room and stamping shop, 50 x 150 feet, two stories, will be erected by the Hamilton Mfg. Co. as an addition to the metal working department of its special furniture manufacturing plant. It will cost $125,000, including new machinery.

WATERLOO, WIS.—Fred H. Dorner & Co., 112 Wisconsin street, Milwaukee, have taken the contract to install a new unit in the municipal electric light plant.

BAY CITY, MICH.—The Automobile Street Sweeper Co., capitalized at $50,000, has been chartered to manufacture machinery and foundry products by Carl G. Miller, Edward M. Sharpe and George A. Doubles.

DETROIT.—The Otwell Tractor Equipment Co. has been incorporated with $10,000 capital, by Ralph B., H. C. and Will B. Otwell.

DETROIT.—The plant of the Buhl Malleable Co., Wight and Adair streets, recently was damaged by fire. The loss was estimated at $100,000.

DETROIT.—The Peninsular Steel Process Co. recently was incorporated with $6000 capital, by Robert M. Allen, J. F. Durkin and Henry Halvorsen.

DETROIT. — The Stampweld Co., capitalized at $10,000, has been chartered to manufacture tools and metal products by J. F. Whitehead, C. H. Taylor and Thomas W. Burke.

DETROIT—The United Broach & Machine Co., capitalized at $50,000, has been chartered to manufacture machinery and specialties by Albert E. Sherman, Louis Myers and J. R. Brehmer.

DETROIT.—The Interstate Steel Products Co., capitalized at $10,000, has been chartered to manufacture, bolts, rivets and forgings by H. H. Armstrong, E. B. Robinson and Albert D. Harris.

DETROIT.—The Samp Mfg. Co., to manufacture and deal in agricultural and contractors' machinery and tools, has been incorporated with $4500 capital, by Charles L. Samp, Herman E. Schultz and Sylvanus Eck.

DETROIT.—The Lehman Precision Grinding Co. has been incorporated to engage in a general grinding and machine shop business, with $15,000 capital, by Robert S. Lehman, Henry Rohr and Clarence A. Brown.

DETROIT.—The Phoenix Mfg. Co., manufacturer of machine steel and other metal products, recently was incorporated with $25,000 capital, by William Wulf, Redford, Mich.; Kenneth A. Morrison and Lloyd M. Martin.

DETROIT.—The Butt Welding & Mfg. Co., capitalized at $10,000, has been chartered to manufacture machinery and conduct a welding and brazing shop by Charles A. Dunn, Duncan D. Button and F. W. Biederman.

DETROIT.—The Detroit Die-Cast Bearing Co. has been incorporated to manufacture and deal in machine tools, etc., with $8000 capital, by William J. McCarthy, Highland Park, Mich., Charles R. Le Clair and Lees W. Chadwick.

DETROIT.—The Michigan Copper Products Co. has been incorporated to manufacture and deal in sheet copper and brass, auto radiators, tubing, etc., with $250,000 capital. The incorporators are John D. Beebe, Watson Beebe and Ellsworth S. Bryant.

GRAND RAPIDS, MICH.—The Automobile Signal Co., capitalized at $300,000, has been chartered to manufacture machinery and automobile accessories by V. I. Cilley and Joseph Renehan.

HOMER, MICH.—The Homer Foundry Co. is reported planning to move its plant to Coldwater, Minn.

MARCELLUS, MICH.—The Chapman Engine Works has been incorporated with $13,000 capital, by Walter C. Jones, Frank W. Patch and Harvey E. Romig.

MILAN, MICH.—The Dillon Steam Motors Corp., capitalized at $1,000,000, has been chartered to build motors by Curtis F. Dillon, Frank A. Silvers and Allan G. Forsythe.

Government Inquiries

BIDS on the following equipment are desired by the navy department, bureau of supplies and accounts.

One plate-bending roll, one compression lever riveter, one handpower splitting shear and one hand power punch, 4116, Washington, June 27.

One joint press, one flanging machine and one double seaming machine, 4118, Washington, June 27.

One steam forging hammer, double frame, 6000 pounds, 4059, Washington, June 17.

One steam drop hammer, double frame, self-contained, 4065, Boston, June 20.

Two 48 x 36-inch planers with 8-foot tables, 4069, Washington, June 20.

Six portable electric hoists, 4024, Washington, June 10.

Four vertical single spindle shapers, reversible, 5½ inches between shoulder and nut, 4054, Brooklyn, June 17.

One squaring shears, direct-connected, motor-driven, 4064, Mare Island, June 20.

Schedule numbers, dates of opening and places of delivery follow the specifications of the tools.

Business in Canada

MONTREAL, QUE.—Gideon Bonneau, 569 Louis Veuillot street, is having plans prepared for the erection of a forge shop here.

MONTREAL, QUE.—The British Wrecking & Salvaging Co. has been incorporated to build ships, boats, etc., with $2,000,000 capital, by Richard T. Heneker, Henry N. Chauvin, Harold E. Walker and others.

SOUTH TEMISKAMING, QUE.—The Kipawa Fibre Co. is making rapid progress on the erection of its plant at Lumsden's Mills. Work has been started on the erection of a power plant which will develop approximately 20,000 horsepower.

BOSTON CREEK.—The Northern Ontario Light & Power Co. will build an electric sub-station here at a cost of $7000, and is in the market for material and equipment.

HAMILTON, ONT.—The building occupied by the Canadian Iron Co. was damaged by fire June 4, with a loss of $12,000.

OSHAWA, ONT.—The ratepayers carried a bylaw granting a fixed assessment for ten years to the Ontario Steel Products Co., who will erect a plant on the Rider property, for the manufacture of automobile springs and axles.

OTTAWA, ONT.—The Spardon Electric Products Co., Ltd., has been incorporated to manufacture electric and mechanical signals, machinery, etc., with $50,000 capital, by Richard J. Sims, Albert E. Honeywell, John C. Grant and others.

OTTAWA, ONT.—The General Engineering Co. has been granted a license to carry on business in Ontario as mechanical, civil and metallurgical engineers, etc., with $10,000 capital, and has appointed Henry H. Claudet, Ottawa, Ont., to be its representative.

PARRY SOUND, ONT.—The ratepayers passed a by-law to borrow $150,000 to be used for the rebuilding and enlarging of the town's electric light and power plants. Mitchell Bros., Toronto, Ont., have prepared plans.

PORT COLBORNE, ONT.—The Canada Cement Co., 273 Craig street west, Montreal, Que., is having plans prepared for the erection of a potash recovery plant here to cost $150,000. General manager, F. P. Jones.

PRESCOTT, ONT.—The Ontario Abrasive Wheels, Ltd., has been incorporated to manufacture abrasive wheels, stones, materials, etc., with $30,000 capital, by Arba E. Kerr of Edwards, N. Y.; Stephen J. Cowan, Lawrence F. Cuthbert, both of Ogdensburg, N. Y., and others.

TORONTO, ONT.—The Canadian Ice Machinery Co., 82 Chestnut street, is reported planning to build a plant at an estimated cost of $60,000.

TORONTO, ONT.—The Toronto Steel Construction Co. is said to be planning the erection of a 60 x 144-foot steel and galvanizing mill, at an estimated cost of $20,000.

TORONTO, ONT.—The Holden-Morgan Thread Mills Co. Ltd., have sold their site of 3¾ acres near Coxwell avenue to an American concern which will establish a plant for the manufacture of kitchen range boilers, etc.

TORONTO, ONT.—The Canadian Tank & Pump Co., Ltd., has been incorporated to manufacture pumping equipment, tanks, etc., with $50,000 capital, by J. D. Copeland, 103 Balmoral avenue, F. H. Pratt, 444 Manning avenue and others.

VANCOUVER, B. C.—H. H. Stevens, Vancouver Centre, and S. J. Crowe, Burrard, B. C., have notified the board of trade that if no private company could be found to undertake the building of a dry-dock in the city, the harbor board would itself take it up.

Iron and Steel Priecs

Corrected to Tuesday Noon

Iron Ores

Superior Ores, Per Ton, Lower Lake Ports

Old range Bessemer, 55 iron	$6.45
Mesabi Bessemer, 55 iron	6.20
Old range non-Bess., 51½ iron	5.70
Mesabi non-Bess., 51½ iron	5.55

Warehouse Prices

Steel bars, Boston	3.40c
Steel bars, Chicago	3.37c
Steel bars, Cleveland	3.37c
Steel bars, Detroit	3.33c
Steel bars, Philadelphia	3.10c to 3.25c
Steel bars, New York	3.37c to 3.415c
Steel bars, St. Louis	3.44c
Steel bars, Cincinnati	3.33c
Steel bars, St. Paul	3.595c
Steel bars, Buffalo	3.45c
Iron bars, Boston	3.40c
Iron bars, Buffalo	4.15c
Iron bars, Chicago	3.37c
Iron bars, Detroit	3.93c
Iron bars, St. Louis	3.44c
Iron bars, Cincinnati	3.33c
Iron bars, Philadelphia	4.30c
Iron bars, New York	3.37c to 3.415c
Shapes, Chicago	3.447c
Shapes, Detroit	3.43c
Shapes, Boston	3.50c
Shapes, St. Louis	3.54c
Shapes, St. Paul	3.695c
Shapes, New York	3.47c to 3.515c
Shapes, Cleveland	3.37c
Shapes, Philadelphia	3.37c
Shapes, Buffalo	3.55c
Shapes, Cincinnati	3.43c
Plates, Buffalo	3.75c
Plates, Chicago	3.67c
Plates, Detroit	3.63c
Plates, Boston	3.70c
Plates, St. Louis	3.74c
Plates, St. Paul	3.895c
Plates, New York	3.67c to 3.715c
Plates, Cleveland	3.57c
Plates, Philadelphia	3.57c
Plates, Cincinnati	3.63c
No. 10 blue anl. sheets, N. Y.	4.75c
No. 10 blue anl. sheets, Chicago	4.57c
No. 10 blue anl. sheets, Cleveland	4.47c
No. 10 blue anl. sheets, Boston	4.85c
No. 10 blue anl., Buffalo	4.65c
No. 10 blue anl. sheets, St. L.	4.64c
No. 10 blue anl. sheets, Cincinnati	4.53c
No. 10 blue anl. sheets, St. Paul	4.795c
No. 10 blue anl. sheets, Detroit	4.53c
No. 28 black sheets, Chicago	5.37c
No. 28 black sheets, New York	5.50c
No. 28 black sheets, Cleveland	5.27c
No. 28 black sheets, Boston	5.90c
No. 28 black sheets, Cincinnati	4.93c
No. 28 black sheets, Detroit	5.43c
No. 28 black sheets, St. Louis	5.30c
No. 28 black sheets, St. Paul	5.595c
No. 28 black sheets, Buffalo	5.70c
No. 28 galv. sheets, Chicago	6.72c
No. 28 galv. sheets, Boston	7.10c
No. 28 galv. sheets, Cleveland	6.62c
No. 28 galv. sheets, Cincinnati	6.28c
No. 28 galv. sheets, Detroit	6.65c
No. 28 galv. sheets, St. Louis	6.79c
No. 28 galv. sheets, Buffalo	7.05c
No. 28 galv. sheets, New York	6.50c
Bands, Boston	4.10c
Hoops, Boston	4.70c

Sheet Schedule

Black

Differentials for gage, per 100 pounds.

No. 30	+20c
No. 29	+10c
No. 28 (carloads)	Base
No. 27	—05c
Nos. 25-26	—10c
Nos. 22-24	—15c
Nos. 17-21	—20c
Nos. 15-16	—25c
Nos. 13-14	—30c
Nos. 10-12	—35c

Standard Sizes

Gages Nos. 12 to 30 inclusive, 24, 26, 28 and 30 inches wide by 72, 84, 96 and 120 inches long. Gages Nos. 14 to 28 in addition to the foregoing, 36 wide by 96 inches and 120 inches long.

Extras for width and length to be added.

Galvanized and Long Terne

Differentials for gage, per 100 pounds.

No. 30	+50c
No. 29	+25c
No. 28 (carloads)	Base
No. 27	—15c
Nos. 25-26	—30c
Nos. 22-24	—45c
Nos. 17-21	—60c
Nos. 15-16	—75c
Nos. 13-14	—90c
Nos. 10-11	—1.00

Standard Sizes

Gages Nos. 12 to 30 inclusive, 24, 26, 28, 30 and 36 inches wide by 72, 84, 96 and 120 inches long.

Extras for width and length to be added.

Freight Rates, Pig Iron

Mahoning and Shenango valleys to:

Cleveland	$1.40
Newark, N. J.	4.80
Boston	5.20
Philadelphia	4.40
Pittsburgh	1.40
St. Louis	4.60
Minneapolis, St. Paul	5.70

Buffalo to:

Albany, N. Y.	$1.75
New England (rail)	3.90
New York and Brooklyn (rail)	3.90

Virginia furnaces to:

Philadelphia	$4.10
New England	4.70
Brooklyn, Jersey City, Newark	4.40

Birmingham, Ala., to:

Boston	$8.00
Cincinnati	3.60
Chicago	5.00
Cleveland	5.00
Louisville, Ky.	3.30
Minneapolis, St. Paul	7.30
New York	7.70
Philadelphia	6.50
Pittsburgh	5.70
Savannah, Ga.	3.40
St. Louis	4.25

Chicago to:

Des Moines	$3.50
Minneapolis, St. Paul	2.50
Milwaukee	.60
Moline, Ill.	1.40
Omaha	4.50
St. Louis	1.90

Ironton and Jackson, O., to:

Chicago	$3.80
Cincinnati	1.80
Cleveland	2.40
Detroit	2.60
Indianapolis	2.30
Minneapolis, St. Paul	5.70

Freight Rates, Finished Material

Pittsburgh, carloads, per 100 lbs., to:

New York	27.0 cents
Philadelphia	24.5 cents
Boston	30.0 cents
Buffalo	21.5 cents
Baltimore	23.0 cents
Cleveland	17.0 cents
Cincinnati	23.0 cents
Chicago	27.0 cents
Detroit	23.0 cents
Minneapolis and St. Paul	49.5 cents
Denver	$1.09
St. Louis	33.5 cents
New Orleans	38.5 cents
Birmingham	57.5 cents
Pacific coast (all rail)	$1.25
Pacific coast (tin plate)	1.25

Blue Annealed

Differential for gage per 100 pounds

Nos. 8 and heavier	— 5c
Nos. 9 and 10 (carloads)	Base
Nos. 11 and 12	+ 5c
Nos. 13 and 14	+10c
Nos. 15 and 16	+20c

Standard Sizes

Widths—24-26-28-30-36 and 48 inches.
Lengths—72-84-96-120 and 144 inches.
Extras for width and length to be added.

Tubular Goods

Steel Pipe

Pittsburgh basing discounts to jobbers in carloads

STANDARD WEIGHT

	Black	Galvanized
Butt Weld		
⅛, ¼ and ⅜-inch	60½	24
½-inch	54½	40
¾ to 3-inch	57½	44
Lap Weld		
2-inch	50½	38
2½ to 6-inch	53½	41
7 to 12-inch	50½	37
13 to 14-inch	41	..
15-inch	38½	..

PLUGGED AND REAMED

Butt Weld		
1 to 3-inch	55½	42
2-inch	48½	36
Lap Weld		
2½ to 6-inch	51½	39

EXTRA STRONG PLAIN ENDS

Butt Weld		
⅛, ¼ and ⅜-inch	46½	29
½-inch	51½	39
¾ to 1½-inch	55½	43
2 to 3-inch	56½	44
Lap Weld		
2-inch	48½	37
2½ to 4-inch	51½	40
4½ to 6-inch	50½	39
7 to 8-inch	46½	33
9 to 12-inch	41½	28

DOUBLE EXTRA STRONG PLAIN

Butt Weld		
½-inch	42½	32
¾ to 1½-inch	45½	35
2 to 2½-inch	47½	37
Lap Weld		
2-inch	40½	31
2½ to 4-inch	42½	33
4½ to 6-inch	41½	32
7 to 8-inch	36½	23

Wrought Iron Pipe

Pittsburgh basing discounts to jobbers in carloads

THREADS AND COUPLINGS

	Black	Galvanized
Butt Weld		
⅛ and ¼-inch	29½	2½
⅜-inch	30½	3½
½-inch	34½	10½
¾ to 1½-inch	39½	23½
Lap Weld		
2-inch	32½	18½
2½ to 6-inch	34½	21½
7 to 12-inch	31½	18½

PLUGGED AND REAMED

Two points less than above

EXTRA STRONG PLAIN ENDS

Butt Weld		
⅛, ¼, ⅜-inch	28½	11½
½-inch	33½	20½
¾ to 1½-inch	39½	24½
Lap Weld		
2-inch	33½	20½
2½ to 4-inch	35½	23½
4½ to 6-inch	34½	22½
7 and 8-inch	26½	14½
9 and 12-inch	21½	9½

DOUBLE EXTRA STRONG PLAIN ENDS

	Black	Galvanized
Butt Weld		
½-inch	20½	8½
¾ to 1½-inch	25½	13½
Lap Weld		
2-inch	20½	8½
2½ to 4-inch	22½	13½
4½ to 6-inch	21½	12½

Lapweld Boiler Tubes

Discounts off manufacturers' standard list, in carloads; less carloads, 4 points less.

Steel

1¼ and 2-inch	19
2¼-inch	24
2½ to 3¼-inch	30½
3½ to 4½-inch	40½

Iron

1¼-inch	+20
2 and 2¼-inch	+10
2½ and 2¾-inch	+ 1
3 and 3¼-inch	— 1½
3½ to 4½-inch	—16

Announcement

The General Steel Company of Milwaukee, Wisconsin, does not maintain any Chicago office, and bears no connection or relationship to any other company by the same name in any state.

Electric GS Steels

Is Our Identification

GENERAL STEEL COMPANY

MILWAUKEE, WISCONSIN

Say you saw it in THE IRON TRADE REVIEW

Iron and Steel Scrap Prices

Corrected to Tuesday Noon

Steel Works Scrap

Gross Tons Delivered to Consumer

HEAVY MELTING STEEL

Pittsburgh	$16.00 to 16.50
Chicago	16.00 to 16.50
Eastern Pennsylvania	15.00 to 16.00
Cleveland	16.00 to 16.50
St. Louis	16.00 to 16.50
Buffalo	14.50 to 15.00
New York (dealers' prices)	12.25 to 12.75
New Jersey points	14.00 to 14.50
Cincinnati	14.50 to 15.00
Birmingham	13.00 to 14.00
Valleys	16.50 to 17.50
Boston (dealers)	11.50 to 11.75

BUNDLED SHEETS

Pittsburgh	$12.00 to 12.50
Eastern Pennsylvania	12.00 to 13.00
Cleveland	12.00 to 12.50
Buffalo	11.50 to 12.00
Cincinnati	10.50 to 11.00

STEEL RAILS, SHORT

Chicago	17.75 to 18.25
Cleveland	18.50 to 19.00
St. Louis	16.50 to 17.00
Birmingham	12.00 to 14.00
Cincinnati	14.50 to 15.00

STOVE PLATE

Pittsburgh	$17.00 to 18.00
Chicago	17.50 to 18.00
Eastern Pennsylvania	17.00 to 18.00
Cleveland	18.00 to 19.00
St. Louis	15.75 to 16.25
Buffalo	18.50 to 19.00
New Jersey points	17.25 to 18.25
Cincinnati	15.50 to 16.00
Birmingham	15.50 to 16.50
Boston	13.50 to 14.00

LOW PHOSPHORUS

Pittsburgh, billet and bloom crops	$21.00 to 22.00
Chicago, billet and bloom crops	19.50 to 20.50
Eastern Pennsylvania No. 1	19.00
Eastern Penna. (guaranteed, plate scrap)	21.50 to 22.00
Buffalo	21.00 to 22.00

SHOVELING STEEL

Chicago	$15.50 to 16.00
St. Louis	14.50 to 15.00

KNUCKLES, COUPLERS AND SPRINGS

Pittsburgh	$17.00 to 17.50
Chicago	17.50 to 18.00
St. Louis	16.50 to 17.00

BALED SHEETS

Pittsburgh	$14.50 to 15.00
Chicago	12.00 to 12.50

FROGS, SWITCHES, GUARDS

Chicago	$16.00 to 16.50
St. Louis	16.00 to 16.50
Eastern Pennsylvania	15.00 to 16.00

BOILER PLATE, CUT

Chicago, No. 1	$13.00 to 13.50
St. Louis, No. 1	13.00 to 13.50

ANGLE BARS—STEEL

Chicago	$16.50 to 17.00
St. Louis	16.25 to 16.75

Iron Mill Scrap

Gross Tons Delivered to Consumer

RAILROAD WROUGHT

Pittsburgh, No. 1	$18.00 to 19.00
Pittsburgh, No. 2	17.00 to 18.00
Chicago, No. 1	18.50 to 19.00
Chicago, No. 2	16.50 to 17.00
Eastern Pennsylvania, No. 1	22.00 to 23.00
Cleveland, No. 1	18.00 to 18.50
St. Louis No. 1	18.00 to 18.50
St. Louis, No. 2	16.00 to 16.50
Buffalo, No. 1	19.00 to 19.50
Cincinnati, No. 1	18.00 to 18.50
Birmingham, No. 1	12.00 to 14.00
New York No. 1 (dealers' price)	16.50 to 17.00
Valleys No. 1	18.00 to 19.00
Boston (dealers)	17.25 to 17.50

WROUGHT PIPE

Eastern Pennsylvania	$17.25 to 17.75
Eastern Pennsylvania, ungraded	11.00 to 12.00
Buffalo	15.00 to 16.00
New York	14.00 to 14.25
Boston (dealers)	14.00

YARD WROUGHT

Eastern Pennsylvania, No. 1	$18.00 to 19.00

CITY WROUGHT

New York, long (dealers' price)	$16.00 to 16.50
New York, special	14.50 to 14.75

BUSHELING

Chicago, No. 1	$15.25 to 15.75
Chicago, No. 2	10.00 to 11.00
Cleveland, No. 1	15.00 to 15.50
Cleveland No. 2	13.75 to 14.50
St. Louis, No. 1	15.00 to 15.50
Buffalo, No. 1	13.00 to 14.00
Cincinnati, No. 1	14.00 to 14.50
Eastern Pennsylvania, No. 1	14.00 to 15.00

MACHINE SHOP TURNINGS

Pittsburgh	$10.00 to 11.00
Chicago	6.50 to 7.00
Eastern Pennsylvania	10.50 to 11.50
Cleveland	8.50 to 9.00
Buffalo	8.00 to 9.00
New York (dealers' price)	7.50 to 8.00
St. Louis	8.00 to 8.50
Cincinnati	7.00 to 7.50
Birmingham	6.50 to 7.50
Valleys	11.00 to 11.50
Boston (dealers)	6.50 to 6.75
Boston (blast furnace) (dealers)	6.00 to 6.50

CAST IRON BORINGS

Pittsburgh	$11.00 to 12.00
Chicago	9.00 to 9.50
Eastern Pennsylvania	12.50 to 13.50
Cleveland	10.50 to 11.00
St. Louis	9.00 to 9.50
Buffalo	11.50 to 12.50
New York (dealers' price)	9.50
Cincinnati	8.00 to 8.50
Birmingham	6.50 to 7.50
Valleys	11.50 to 12.00
Boston	8.25 to 8.75
Boston (blast furnace)	6.00 to 6.50

IRON AXLES

Pittsburgh	$26.00 to 27.00
Chicago	30.00 to 30.50
Eastern Pennsylvania	28.00 to 30.00
Cleveland	27.00 to 28.00
St. Louis	22.00 to 22.50
Buffalo	23.00 to 24.00
Cincinnati	23.50 to 24.00

IRON RAILS

Chicago	$20.00 to 21.00
Cleveland	22.00 to 23.00
St. Louis	22.00 to 22.50
Buffalo	21.00 to 22.00
Cincinnati	22.00 to 22.50

PIPES AND FLUES

Chicago	$13.50 to 14.00
Cleveland	13.50 to 14.00
St. Louis	14.00 to 14.50
Cincinnati	13.50 to 14.00

GRATE BARS

Chicago	$16.75 to 17.25
Cleveland	17.50 to 18.00
Buffalo	18.00 to 19.00
New Jersey points	16.25 to 17.00
Eastern Pennsylvania	16.50 to 17.50

FORGE FLASHINGS

Cleveland, large	$11.00 to 11.25
Cleveland, small	13.75 to 14.25
Chicago, small	12.50 to 13.00
Boston (dealers)	10.00 to 10.50

FORGE SCRAP

Chicago	$16.50 to 17.00
Eastern Pennsylvania, No. 1	12.00 to 13.00

ARCH BARS AND TRANSOMS

Chicago	$24.50 to 25.50
St. Louis	21.50 to 22.00

ANGLE BARS—IRON

Chicago	$20.00 to 20.50
St. Louis	17.00 to 18.00

Iron and Steel Works Scrap

Gross Tons Delivered to Consumer

AXLE TURNINGS

Pittsburgh	$14.50 to 15.00
Eastern Pennsylvania	11.00 to 12.00
Boston	7.50 to 8.00
Cleveland	13.00 to 13.50
Buffalo	13.00 to 14.00
Chicago	11.75 to 12.00

STEEL CAR AXLES

Pittsburgh	$25.00 to 26.00
Eastern Pennsylvania	28.00 to 30.00
Cleveland	26.50 to 27.50
St. Louis	25.00 to 25.50
Buffalo	23.00 to 24.00
Chicago	26.50 to 27.00
New York (dealers' price)	21.00 to 22.00
Birmingham	18.00 to 20.00
Boston (dealers)	19.00 to 20.00

SHAFTING

Eastern Pennsylvania	$23.00 to 25.00
St. Louis	23.00 to 23.50
New York (dealers' price)	19.00 to 20.00
Chicago	22.50 to 23.00

Iron Foundry Scrap

Gross Tons Delivered to Consumer

CAR WHEELS

Pittsburgh iron	$21.00 to 22.00
Pittsburgh, steel	17.50 to 18.00
Chicago, iron	21.00 to 21.50
Eastern Pennsylvania, iron	23.00 to 24.00
Cleveland, iron	21.00 to 22.00
St. Louis, iron	20.00 to 20.50
Buffalo, iron	21.00 to 22.00
Birmingham, iron	20.00 to 22.00
Birmingham, tram car	20.00 to 22.50
Boston	17.75 to 18.00
Cincinnati	18.00 to 18.50

NO. 1 CAST SCRAP

Pittsburgh, cupola	$21.00 to 22.00
Chicago, cupola	22.00 to 22.50
Eastern Pennsylvania, cupola	21.00 to 22.00
Cleveland, cupola	21.00 to 22.00
New York, cupola (dealers' price)	19.00 to 20.00
Cincinnati, No. 1, cupola	21.00 to 21.50
Birmingham, cupola	20.00 to 22.00
St. Louis, railroad	22.00 to 22.50
St. Louis, agricultural	21.50 to 22.00
Buffalo	22.50 to 23.00
Boston	18.50 to 19.00

HEAVY CAST

New York (dealers' price)	18.00 to 19.00
Buffalo	21.00 to 22.00
Pittsburgh	19.00 to 20.00
Eastern Pennsylvania	18.00 to 19.00
Cleveland	17.00 to 18.00

MALLEABLE

Pittsburgh, railroad	$15.00 to 16.00
Pittsburgh, agricultural	14.00 to 15.00
Chicago, railroad	17.50 to 18.00
Chicago, agricultural	17.00 to 17.50
Eastern Pennsylvania, No. 1 cupola	15.00
Eastern Pennsylvania, ordinary	15.00
Cleveland, railroad	17.00 to 18.00
Cleveland, agricultural	14.00 to 14.50
St. Louis, railroad	14.50 to 15.00
St. Louis, agricultural	14.00 to 14.50
Cincinnati, railroad	15.00 to 15.50
Cincinnati, agricultural	14.00 to 14.50
Boston	12.00 to 12.50
Buffalo	18.00 to 19.00

Miscellaneous Scrap

Gross Tons Delivered to Consumer

RE-ROLLING RAILS

5 feet and over

Pittsburgh	$20.00 to 20.50
Chicago	18.25 to 18.50
Eastern Pennsylvania	17.00 to 18.00
Cleveland	16.50 to 17.00
St. Louis	17.50 to 18.00
Birmingham	14.00 to 15.00
Boston (dealers)	12.75 to 13.25

LOCOMOTIVE TIRES

Chicago	$19.50 to 20.00
St. Louis	16.00 to 16.50

BOILER PUNCHINGS

Chicago	$19.50 to 20.50
Eastern Pennsylvania	18.00 to 19.00

No. 605—A short glove made of chrome tanned leather, seams sewed with steel and palm reinforced with an extra leather patch and steel ribbons.

Per dozen pairs.....**$10.20**
or all lefts or all rights.

The "STEEL-GRIP IDEA"

The extra steel ribbon reinforcement on chrome tanned leather means a FLEXIBLE, PLIABLE, COMFORTABLE hand covering, affording the utmost hand protection and safety for the roughest work of shop, foundry, mill, scrap yard, smelter or whatever metal in any form is handled.

No. 644 — A four-inch gauntlet glove made of chrome tanned leather. Seams sewed with steel making them rip-proof. Palm and fingers reinforced with steel ribbons over strips of tough leather.

Per dozen pairs....**$15.00**
or all lefts or all rights.

No. 678—A chrome tanned leather steel sewed mitten made so it can be worn on either hand. No reinforcement except on thumb.

Per dozen pairs (24 mitts)
.....**$8.40**

YOU
Can't Go Wrong On This Combination

The Steel-Grip "605" and our special heavy duck apron. Chippers and grinders in the larger plants and many of the smaller ones, too, find this combination impossible to equal. They find that "605" will outwear a dozen pairs of canvas gloves, besides giving them positive protection against sharp and rough edges. The apron *wears* like *leather*. Welders wear them because they are fire-proofed and afford protection against sparks and excessive heat.

To the left are shown two other popular styles of Steel-Grip hand protection. On account of the heavy reinforcement "644," a four-inch gauntlet glove, is recommended for sand blasting. It provides positive protection from stinging sand and grit.

"678" is a reversible steel sewed mitten and is used mostly for handling and sorting metal in all forms such as castings, scrap, etc. This mitten can be worn on either hand, thus giving twice the wear of the ordinary mitten.

A heavy eight-pound duck apron, fire-proofed and asbestos-filled to preserve and lengthen its life and to afford body protection against sparks and extreme heat.

		Per Doz.
No. 100	24x30 inch	$15.00
No. 110	24x36 "	18.00
No. 120	24x42 "	21.00
No. 130	24x48 "	24.00

REMEMBER
WE ARE
HEADQUARTERS

For STEEL-GRIP gloves and mittens, moulders leggings, aprons, suits, asbestos gloves and mittens and all kinds of protective apparel. Write us your needs and we will be pleased to submit prices.

Steel-Grip Protection Can Be Supplied for the Price of One Small Accident

INDUSTRIAL GLOVES CORPORATION

Owners of HICKORY STEEL-GRIP GLOVE CO.

Box R-6 **CHICAGO, ILL.**

New Trade Publications

HOISTS.—A postcard folder, containing descriptions of a number of electric hoists is being distributed by the Shepard Electric Crane & Hoist Co., Montour Falls, N. Y.

THREAD MILLERS.—A 4-page bulletin is being circulated by the Smalley General Co., Inc., Bay City, Mich. It contains a number of line drawings and some valuable thread milling data, including the results of several time studies.

PLASTIC CEMENT.—The Celite Products Co., New York, recently published bulletin B-13, in which it describes the use and application of plastic cement to irregular heated surfaces for the prevention of heat losses and for increasing the capacity of high-temperature equipment.

FOUNDRY EQUIPMENT.—A bulletin devoted to the description and operation of modern foundry appliances recently was published by the Arcade Mfg. Co., Freeport, Ill. Among the machines described are squeezers, jolt-strip machines, molding machines, jolt stripping plate machines, pouring devices, core jolters and snap flasks. An illustration accompanies each description.

SOLDERING IRONS.—An 8-page, 3½ x 6-inch folder in which electric soldering irons and hand tools are described and illustrated, is being circulated by the Cutler-Hammer Mfg. Co., Milwaukee. The equipment described includes electric soldering irons; an automatic rack for holding the irons when not in use; a current regulator and switch.

WOODWORKING MACHINERY.—A catalog in which woodworking machinery is described and illustrated is being distributed by the P. Pryibil Machine Co., Inc., New York. Many types of woodworking machines and accessories made by the company are described and illustrated. The company also manufactures lathes, buffers, grinders and power transmission machinery.

ENGINE FORGINGS.—A small folder devoted to prices and descriptions of strap joints, connecting rods, crankshafts and other forgings for engines has recently been issued by the William Leard Co., New Brighton, Pa. The prices are tabulated on one side of the folder while the other side is devoted to descriptions and drawings of standard types of engine forgings.

EXPANDING REAMERS.—An expanding or adjustable reamer is described and illustrated in a 4-page bulletin recently issued by the Wetmore Reamer Co., Milwaukee. According to the bulletin, this reamer may be attached to various types of arbors. A number of tables and line drawings appear in the bulletin.

STOKER.—The Combustion Engineering Corp., New York, has issued a 4-page leaflet describing and illustrating an improved dumping arrangement for stokers which it manufactures. According to the leaflet, the improvement which consists of a square bar arrangement, facilitates the operation of dumping. Details of the device are shown in a 2-page illustration.

PATTERN PLATES.—In order to facilitate the ordering of steel foundry plates, the Moltrup Steel Products Co., Beaver Falls, Pa., has issued a specification sheet covering nine different types of plates. The sizes of the standard parts of the plates, such as extensions for plant guides, are shown in the drawing, but the purchaser is asked to specify the spacing of holes for the side and end guide pins and to indicate the over-all dimensions of the plate desired. Supplementary drawings on the specification sheet show the actual size of holes for standard flask pin guides. In an explanatory paragraph the need of giving the outside dimension of the flask when ordering plates is emphasized.

MACHINE TOOLS.—Automatic turret lathes, standard turret lathes, boring mills, horizontal boring mills, lathes and small tools, including reamers, chuck bushings, boring bars, tool holders and chucks, are briefly described and illustrated in a condensed catalog recently issued by the Gisholt Machine Co., Madison, Wis. An illustration of a time-recording machine manufactured by the company is given on the last page of the booklet.

LATHES.—An illustrated 20-page pocket-size booklet devoted to lathes has been issued by the Lodge & Shipley Machine Tool Co., Cincinnati. According to the booklet the lathes can be used for both deep cuts and heavy feeds, and light cuts and high speeds. Twelve spindle speeds can be obtained through the headstock gears. The lathes are equipped with six direct and six back gear speeds. All speed changes are made without shifting the belt. Other data pertaining to the machines are given.

CRANES.—A 50-page illustrated bulletin has been issued by the McMyler Interstate Co., Cleveland, in which cranes, principally those for use in the shipbuilding industry, are described and illustrated. The data given are representative of present day practice in ship construction. The types of cranes described and illustrated in the booklet are: Horizontal cantilever revolving cranes, which include hammerhead, pintle and turntable designs; boom jib cranes, of the pintle and turntable designs; standard locomotive cranes and overhead traveling cranes.

Business Changes Recently Announced

AS exclusive sales agents for the Southern Ferro Alloys Co., Chattanooga, Tenn., makers of ferrosilicon, bessemer ferrosilicon and silvery or high silicon pig iron, the Canada Carbide Sales Co., 30 Church street, New York, has opened a western office in Chicago, at room 549 McCormick building, in charge of Henry Booth.

* * *

The William B. Scaife & Sons Co., New York City, Pittsburgh and Oakmont, Pa., manufacturer of steel tanks, etc., has established a branch sales and engineering office at 38 South Dearborn street, Chicago, in charge of Charles F. O'Hagan.

* * *

The Standard Welding division of the Standard Parts Co., Cleveland, has opened a branch sales office in New York at 1006 Times building, with William A. Paxton in charge.

* * *

The Chicago offices of the International Oxygen Co., Newark, N. J., in charge of Philip G. Wesley, have been removed from 223 Railway Exchange building to 817-820 Chicago Stock Exchange building, 30 North La Salle street.

* * *

The Duntley-Dayton Co., Chicago, has opened a branch in the Century building, Cleveland, in charge of J. C. Sague and one in the Home Trust building, Pittsburgh, in charge of W. M. Hankey.

* * *

The Johnson Tool Co., Pawtucket, R. I., which specializes on tools and special machinery of every description, has moved its business to 197 Eddy street, Providence, R. I.

* * *

The Champion Engineering Co., Kenton, O., manufacturer of cranes, has opened an office at room 1001 Singer building, 149 Broadway, New York, in charge of J. W. Spensley.

* * *

The Pittsburgh office of the Stewart Iron Co., Cleveland, has been removed from 1701 to 1515 Farmers Bank building. Clyde Brooks is Pittsburgh district sales manager for the company.

* * *

The Niles-Bement-Pond Co., 111 Broadway, New York, has opened an office and store in Rochester, N. Y., 116 South avenue, where its machine tools and full stock of machinists' small tools, manufactured by the Pratt & Whitney Co., will be carried in stock.

* * *

The Iowa Radiator Co., Cedar Rapids, Iowa, recently changed its name to the Chandler Heater Co.

* * *

C. O. Johnson & Sons, makers of high grade fine steel wire, 22 Lakewood street, Worcester, Mass., building a new factory at Ludlow and Graham streets in that city, have changed their name to the Worcester Wire Co.

* * *

The Luntz Iron & Steel Co., iron and steel scrap, Canton, O., has opened an office in Cleveland at 506 American Trust building.